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Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA
SANTA CRUZ

BIORESONANCE AND THE IMPLICATE IN MUSICKING

A dissertation submitted in partial satisfaction
of the requirements for the degree of

DOCTOR OF MUSICAL ARTS

in

MUSIC COMPOSITION

by

Jonathan C. Hoefs

December 2017

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Awareness Methodologies) umbrella

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Abstract

Bioresonance and the Implicate in Musicking

Jonathan C. Hoefs

This work may be viewed as a processually-centered approach to attention, cognition, and consciousness as they relate to composition, pedagogy and musicking. Through this approach— which is deeply resonant with streams of *Deep Listening*— we will seek to apply methodology which focalizes both exterior processual observation (in terms of dynamical systems analysis, neurobiology, musical process, etc.) and internal attention to unfoldment as it is enacted through the activity of musicking¹ and the embodied experience of the auditor, in a synthesis, towards comprehensive understanding of the entirety of the processual unfoldment underlying musicking.

An approach which preferences the direct experience of sound and the ‘irreducible’ dimensions of musicking as the primary praxis of complexity unfoldment (and counterbalance to a perceived privileging of artifactual forms of complexity historically, intimately interlinked with the historical realization of phenomenological research cross-modally) is employed towards outlining a

¹ Not making of experience a fetish, but considering it meaningful dynamical unfoldment by which to induce and explore dynamical properties, as the experiential unfoldment is a dynamical system in operation.

laboratory environment which ferments a broader order of understanding than traditional approaches can facilitate.

Central to my argument is an engagement with implicate and explicate process, as well as what these can mean across various dimensions of expression, through a strategy which reveals multiple refractions of a prism of observation which includes ontology and musicking, but is not limited to/by them. Thus central will be orienting the reader within this landscape. PHI X 174, one of two musical compositions submitted, emerged primarily from a process of explicate (and artifacted) complexity, and thus acts as a bridge in my own personal compositional history between the explicate and implicate processual emphasis, in parallel with the historical gesture unveiled in the first chapter of this text. PHI X 174 results from a software-created dynamical system in which the human genome unfolds in iterative complexity. Algorithmic music is generated as resultant of the dynamical activity of the system as a whole², and not as resultant of linear generative process. Thus it approaches an ecological approach, but not an implicate approach.

The second composition, Piece for Non-Local Butterfly, is deceptively simple on the surface; in answer to the question: “how can I ferment the implicate activity compositionally, with an ear towards the leading edge which forms of complexity interlinked with Deep Listening and other emergent streams point towards?” (which I’ve explored for several years now), I developed a process which

² It thus outlines explicate process not exclusivated to the human realm: it is a sort of collaboration between the explicate processes of nature, and those of man.

exploits the unique complexity fundamentals of consciousness as the implicate stage of musical unfoldment and enactment (parallel to the unity at the level of consciousness explored in Husserl's work, in alignment with a deconstruction of the generative roots of artifacted complexity and process), psychology, the conscious observer, and an understanding of the leading edge of complexity exogenation alluded to above, all of which the reader will find unfolded in this text.

As observed operating in Piece for Non-Local Butterfly (which does come from an implicate approach), this process of complexity exogenation is further analogous to the intrinsic activity of the brain, the exponentiation of brain activity spiking corollary to it (in direct contradistinction to traditional [and primarily linear] notions of action and unfoldment in cognition)³, and serves as a metaphor for the shift in musical, pedagogical, and ontological activity which this work invites a rigorous and active (re)-exploration of, and (re)-engagement with – primarily in the domain of attentional inquiry, and the dynamical activity it unveils as process unfolds. This understanding expands from there into all domains to the degree that they are in praxis to it.

³ A unique performer was found to be required to rigorously perform this piece, eschewing stereotypes that instruction-based pieces are simplistic in nature. Instead, the forum for, and nature of, their complexity must be understood – in praxis to the complexity habitus out of which it has emerged historically, an inquiry which this text facilitates.

Dedicated to former
committee member Pauline Oliveros,
who passed in November, 2016.

May the listening ever deepen.

Part One: Pre-Amble

Introduction

This work (consisting of the attentional inquiries¹, two musical compositions, and the text) highlights the perspective of applied methodological engagement at the level of the immediate dynamical terrain of the auditor, the dimensions of processual unfoldment which occur within this, and their interactivity (and isomorphisms) with the processual dimensions of music, as being critically significant to a rigorous apprehension of music in the 21st century. The reader who endeavors to understand this text deeply (and its unconventional approach) should apply a dedicated practitioners' attitude, considering what emerges from methodological application of the various attentional inquiries as being critical to an understanding of the work as a whole. It is, as it were, in dialogue with the text and the compositions. Ample time should be allowed for the unfoldment of these attentional inquiries as a result - a

¹ The formal directing of attention, simultaneous with observation of the processual unfoldment that ensues, towards a deeper understanding of the nature of attention, creativity, and consciousness in musicking.

methodological revolution which inculcates the above mentioned attitude is intrinsic to the gesture articulated herein - further, its application is its illustration: without application, there is no illustration.

Before we proceed further, I would like to contextualize this work within the historicity of Western academia via a brief literature review, beginning with Arthur Schopenhauer (1788 - 1860). Schopenhauer has been discussed as an ‘iconoclastic’ German philosopher (Cartwright 526), and one who broke strongly with the past; specifically, a rejection of German idealism (Wicks), a resonance with Eastern philosophies (Cartwright ix), and the preferencing of the aesthetic over the purely material (Shapshay) are noted elements of his work in this regard. His influence has since expanded to a broad domain of artists and theorist’s cross-modally, including Freud, Wittgenstein, and Nietzsche (Cartwright i). Along with Schopenhauer’s purported ‘pessimism’, as well as his contributions to epistemology, metaphysics, and ethics, several specific contributions poignantly relevant to the historical gesture this text engages with will be useful to bring out.

In section 52 of The World as Will and Idea, Schopenhauer outlines an astonishing series of claims: that music is signifier for the world (and not ideation, and that this is what makes it unique) (Schopenhauer 334), that humans from all ages have understood this (through an implicit direct understanding, which they have

‘renounced’ espousing through abstract conceptualization)², and that the corroboration or refutation of this view must be left to the empirical effect upon the reader of Schopenhauer’s views, **in concert with music** (Schopenhauer 335). In essence, Schopenhauer points toward what I term the implicate activity in music, and establishes the necessity for corroboration of his claims in this regard to occur through processual unfoldment (as emphasized throughout this text, as well as in the work of Husserl).

Schopenhauer also introduced the methodology of aesthetic contemplation, wherein one ceases to perceive art as an objectification (or representation), by merging with perception itself, ostensibly eliminating the conscious observer as interpolator. One then explores what results from that (Shapshay). This historically foreshadowed several of Husserl’s examinations, as well as the attentional, neurobiological, and dynamical systems based inquiries of this text, emphasizing the theme of corroboration in the domain of processual unfoldment, and not exclusively in that of abstract ideation³.

² Theoretically because it is so at-odds with normative ways of ideation (to lexically be captured and objectified) as to appear impossible to reconcile.

³ Further, it will become relevant to distinguish between processual unfoldment which is generatively sourced in abstract ideation, and that which is not, as we gradually establish a sense for implicate and explicate process.

Edmund Husserl (1859 - 1938), also a German philosopher, has widely been considered the father of phenomenology (Reeder 11). In the beginning of his career, he inquired into the nature of various forms of unity (Husserl *Ideas*). In the course of this inquiry, he discovered an underlying unity of a completely different nature which captured his attention for the rest of his voluminous and highly influential career: that which he found to be implicit at the level of consciousness.

Phenomenology is not just another school of philosophy. It represents a methodological revolution historically, which will be seen in this text to be mirrored cross-modally. It is embodied by the phenomenological reduction, the *epoché*, and the perspective of transcendental subjectivity as Husserl articulated it. Husserl developed numerous methodological strategies for navigating this dynamical terrain throughout his career.

Transcendental subjectivity⁴, described as a practice, not just a perspective, examines what remains when the autobiographical self has been removed from the equation of phenomenal unfoldment, taking the landscape revealed to contain an essentiality more primary to the philosophical pursuit than human artifice. The application of transcendental subjectivity is contiguous with the approach to attentional inquiry contained in this text, as well as Deep Listening, and the underlying goal herein of revealing what is essential in music at a deeper level than

⁴ This is not to be confused with the usage of the term ‘transcendental subject’ in the context of the Bhagavad-Gita.

the phenomenal abstractions of language, concept, and ideation allow for traditionally.

With Husserl, a vital movement in the historio-cultural progression of Western culture was initiated. This movement highlights practical methodological unfoldment as source and fountainhead of a new signal-chain of knowledge-formation and understanding, and not merely as tool in servitude of manufactured ideation as end in-and-of-itself; this movement, this gesture at the level of consciousness, I argue represents the cessation of the exclusivation of knowledge-formation processes into circumscribed domains fundamentally self-valorizing and self-limiting at their core. I further argue that the teleological habit underlying this activity has kept Western culture recursing mimetically in finite terrain which, like our natural resources, has nearly been exhausted at this historical moment. Husserl envisioned a science of phenomenology (Varela); this text outlines a pragmatic realization of this in the domain of music which mines the processual depth of our tradition at a new level, and opens up the possibility of disseminating what emerges from it across disciplines.

John Cage (1912-1992) was a pre-eminent 20th century avante-garde composer. Inspired by Husserl, he inquired into 'sound as it is' early on (Cage *Silence*). His broader inquiries unveiled the dynamical roots of our processual universe as humans, and were reflected in his many compositional processes, as well as in his writings. Innovations such as prepared piano, chance operations, and the temporal indeterminacy of his later usage of bracket notation represented compositional strategies which reflected the larger processes of nature, its intrinsic

indeterminacy, and the praxis of method and unfoldment which reflect that of actor and resultant (Pritchett) (which is further reflected in both the aesthetic contemplation of Schopenhauer, and the perspective of transcendental subjectivity as articulated by Husserl).

Cage was interested in processes which removed the composer from this signal chain (Cage *Silence*). Simply, he was focalized upon processes which invoked self-organization, rather than composer-organization. Throughout his life he manufactured countless compositional methods for doing this, leaving behind a legacy which revealed new possibilities for what music could become, as well as what it could become a forum for. This text is itself a dynamical processual unfoldment, wherein process/content/form reflect each other in infinite fractal dynamism, similar to Cage's exploits in this domain. One understanding of this text is as the performance of a composition of methodological significance, one which seeks to inculcate a new notion of methodology in the tradition, through application of said methodology.

Pauline Oliveros (1932-2016) was another seminal American composer. She was an important figure in electronic music, co-founding and co-directing the San Francisco Tape Music Center (Von Gunden 52). She is an essential historical figure as a woman, as well; arguably, she is one of the greatest female composers of all time in the Western concert tradition (and notably, one acknowledged in her lifetime), who famously posed the question "WHY have there been no "great" women composers?"

in her September 13th, 1970 New York Times article “And Don't Call Them ‘Lady’ Composers” (Oliveros *And Don't*).

She was a publicly ‘out’ lesbian in America long before it became ‘fashionable’ to be so; theorists have argued for a ‘lesbian musicality’ in her work (Mockus), despite her public avowal that her music has nothing to do with her being either a woman or a lesbian (Mockus 9). She created Sonic Meditations, predicated upon a new compositional approach wherein simple instructions given to a group of participants create complex resultants in organic unfoldment (Von Gunden 107). In addition, Oliveros was known widely as a gifted improvisationalist throughout her career.

Oliveros pioneered Deep Listening. Deep Listening is a practice, and it is a phenomenon which occurs within a human being. As a practice, it is meant to unveil the phenomenon, but the phenomenon may occur in the absence of practice, as in spontaneous states of Deep Listening which emerge while attending a concert performance of Mozart or Bach.

Deep Listening reflects the dynamism of method and unfoldment processually found in all of music (as highlighted in Cage’s work at a level of macro-process), at a level of micro-process: that of the internal microcosm of consciousness, the neurobiology, and the body. Thus neurobiology, dynamical systems, physics, and disparate other fields come into play as being inseparable from the praxis of this unfoldment, and the processual sophistication we find in the field of musical composition may then be applied cross-modally. Oliveros heavily influenced the

approach of the attentional inquiries of this text, as well as the ‘omniangulatory’ strategy employed on the intellectual level of discourse herein.

This ‘omniangulatory’ strategy may be observed in Oliveros’ approach to ‘defining’ Deep Listening. In Deep Listening: a Composers’ Sound Practice, Oliveros approaches the question “What is Deep Listening” twice; the first time, she directs the reader to their own unfolding process, and practice, as the source of answering this question (Oliveros *Deep* xxi). The second time, she gives an expansive, dynamical definition which point towards the multi-dimensionality of consciousness she wishes to emphasize (Oliveros *Deep* xxiii). Over the years, she published several different definitions of Deep Listening on her website; each accentuated different angles of a prism which pointed towards the phenomenon, but never really pinned it down. I believe this was intentional, and reflects an implicit understanding that the phenomenon of Deep Listening, which occurs dynamically within the human organism is, like music, an activity whose dynamism exists in a praxis of complexity of a completely different order than that of traditional intellection, reduction, and definition. While they are not incommensurable, their translation must be approached with sensitivity if it is not to become a reduction in the process⁵. Perhaps Schopenhauer would agree.

⁵ Thus the omniangulatory approach established in this text, where rather than define in traditional fashion, an activity is inducted from multiple angles in order to biangulate, triangulate, and eventually, omniangulate it in the dynamical field which it

Deep Listening is a process, and is best defined/discovered through process. Similarly, the engagements of this text will be best defined/discovered through process, as the gesture at the level of consciousness they outline is not intended to arrive at masculine endings in consciousness exclusively, as much of Western scholarship has regrettably reduced itself to, but rather to include an unbroken spectrum of masculine endings and feminine unfoldment in the geometries of ontology it unfolds. In short, Deep Listening occurs in the domain of processual unfoldment: the continuum/flux, and this text takes to heart the necessity of developing strategies for engaging this territory which do not regress into reductionist habits. Like the work of Schopenhauer, Husserl, and Cage, a methodological revolution is intrinsic, and the content of intellection cannot be meaningfully separated from it. Arguably, with Oliveros, the era of habituated listening has given way to the era of Deep Listening – and this methodological revolution is the bridge - wherein we discover how to listen without our habits.

David Bohm (1917-1992) was an important American physicist who studied in the theoretical physics group headed by Oppenheimer at UC Berkeley. Despite being rejected from admittance into the Manhattan Project (based upon alleged

occurs in independently of abstract conception (find more discussion on p. 129-132, p. 180, in the chapter entitled Listening, and on p. 231 and 552).

political affiliations), the project confiscated Bohm's thesis research, denied him access to it, and UC Berkeley subsequently granted Bohm his doctoral degree (based upon Oppenheimer's approval) without him ever having written a dissertation (Peat 64).

Bohm left the United States, working for most of the rest of his life outside of its borders. He contributed profoundly to our general understandings of quantum physics, consciousness, and thought, as well as our specific understandings of the phenomena of non-locality and neuro-psychology (including helping to develop the holonomic model of cognition put forth by Pribram). His notions of the implicate order, and the causal theory of physics, will be integral to creating a coherent frame for discussing processual unfoldment in this text, beyond the constraints of traditional models. His ideas will be applied in the domains of sound, musicking, consciousness, cognition, and every other domain explored herein. As they will be discussed in detail in the chapter entitled The Implicate Order in Sound, we will allow them to be examined more deeply at that time. They provide an understanding which can negotiate the inter-nested, multi-dimensional territory we seek to unpack, which may be seen as a culmination of the historical progression outlined in this chapter.

Benoit Mandelbrot (1924 – 2010) was a Polish-born, French and American mathematician who originally coined the term 'fractals'. He studied 'roughness' in various systems, and found that inside this roughness was, in fact, incredible order (Mandelbrot). He found that these qualities could be found throughout nature, as well as in all man-made systems, and that our normative view of linearity in systems was

given over to an erroneous faith. The application of this understanding subsequently redefined the fields of geometry, mathematics, economics, as well as disparate other disciplines (Mandelbrot).

This fractal understanding is embodied by the dynamical perspective⁷, wherein any phenomena may be purveyed through the lens of being a complex dynamical system, as all are complex dynamical systems⁸. In this text, it will be useful to extend this to the body as a dynamical system, and to understand this activity as being primary in the musical process, just as omnipresent as acoustical space.

Gilbert Rouget engaged in an intricate topographical survey of exterior phenomena in culture which exogenate in a spectrum inter-linked with trance and ecstasy (Rouget)⁹; Judith Becker expanded upon Rouget's work, creating an analysis of 'Deep Listener's' and their significance within various cultural praxi, and the

⁷ I have found the dynamical perspective to be particularly useful dialectically, as it depersonalizes the phenomena it refers to, effectively bypassing many of the ingrained lexical associations we take for granted. In terms of consciousness, this is particularly important, as it facilitates more rigorous engagement of this solipsistic subject.

⁸ As just one example of how this has been applied, Ralph Abraham presents a dynamical systems coherent historiographical analysis in Bolts from the Blue (Abraham), applying the properties of dynamical systems to a historical analysis of works of art which predict discoveries in other fields.

⁹ Interestingly, Rouget admits that the theatre of trance is an 'innermost' one (Rouget 317), even after consciously stating his intention to not use subjective accounts in his text (Rouget 3).

cultural coherencies they are involved with (Becker). I argue that all of these exterior phenomena (as music, in Schopenhauer's view, points towards the activity of life) point to a more underlying activity occurring in the organism, one of heightened coherency, which extends isomorphically through culture, body, nature, etc. in the geometries of its activity, that this is incredibly significant, and that it is something which an analysis which stops at 'emotionality', in terms of the generative process of consciousness, will miss.

In her book, Deep Listener's, Becker hypothesizes that "trancers *are* Deep Listeners in the sense that they too experience strong emotional reactions to musical listening" (Becker 29). This is problematic because it assumes that experiencing strong emotional responses while listening to music is synonymous with Deep Listening (this is Becker's *a priori* assumption here). In my experience, Deep Listening (as a practice) elicits dynamical activity in the organism of a variety far wider than 'strong emotional response' as a singular category suggests; expanded states, experiences of stillness or spaciousness, heightened sensitivity to interconnectivity of sounds, etc. are endemic first person descriptors of the experience of this spectrum of dynamical activity, of which strong emotional responses is merely a small fragment¹⁰. 'Strong emotional responses' are a symptom of a particular heightened coherency activity in the organism; it is a mistake to consider them to

¹⁰ Simultaneously, at times states of Deep Listening will emerge while listening to music, without any formal practice which elicited it.

encapsulate its entire broad scope in the general case. Clearly if we are to address the entire activity of consciousness in musicking, we cannot limit our inquiry to reductions of this ('emotionality', the exteriorally observable activity of trance, etc.).

It is my belief that this broader understanding of expanded listening synchronies represents a possibility (generally) latent in every human being, not just musicians. It is further my belief that the pleasure associated with music is interlinked with these expanded synchronies, and the listeners contact with them, if only for an instant – it is not due to a novelty in the music, but rather to a novelty discovered in the geometries of their own neurobiology - in its own dynamical self-organization - and that we must study this topography from every angle possible if we are truly to understand music from a dynamical perspective, and not one which devolves into somnambulant self-reification and self-referencing.

It is further my belief that listening pedagogy¹¹ can facilitate the emergence of, and simultaneous observation of, these synchronies, as well as a broader dynamical understanding of their concomitant emergence in listeners¹². The isomorphic similitude between experienced listening, and the 'exteriorally' dynamical activity of music as unfolding vibration becomes the focal point for understanding dynamical processual activity in nature, the body, consciousness, as well as in all

¹¹ Which includes attentional inquiries and Deep Listening.

¹² Refer to p. 103-120 for discussion of a practical implementation of listening pedagogy in the modus of this work, in the form of a college course entitled Sound, Listening, and Consciousness, which was taught at UCSC in 2013.

systems (including that called ‘music’), through its refraction. The cultivated purvey which emerges from attentional inquiries, Deep Listening, listening pedagogy, and similar activities is more direct, less interpolated by the arbitration of perceptual mediation¹³, and is thus further in alignment with the historical gesture outlined in this chapter.

It is my belief that the quality of isomorphic similitude mentioned above points to the generative seed of our entire musicking activity (whether it be instrumental, compositional, or musicological), operating primarily unconsciously: the momentum of the historic moment is to bring this to conscious awareness and take the reins of a larger field of musical process, one which includes the body and consciousness intimately and directly, through the facilitation of a methodological modus of inquiry which uncovers the generative terrain of the conscious observer, rather than reiterating it unquestioningly. It consequently creates the space for a new understanding, and a new musicking, to emerge.

Thus our entire examination is predicated upon investigation into the internal activity underlying musicking, from within the body. If we understand this activity through the lens of dynamical systems analysis, we discover a fractal unfoldment, like music, occurring inside the organism: one which may be described in terms of unfolding coherencies (which include, but are not limited to, synchronies in

¹³ Discussion of this may be found throughout, especially in the chapter entitled Listening.

neurobiology and other biological systems) and the properties of complex dynamical systems, and which may be delineated along the praxis of implicate/explicate process as established gradually herein (in order to unveil an analysis of processual unfoldment which is consistent and co-informant across the lines of musicking, biology, and other life processes).

I invite the reader to consider this dynamical unfolding process of transforming coherencies in the organism as it interacts with music. I invite the reader to consider this phenomenon objectively, as a scientist would, as well as through the modus of the Bioresonant Laboratory of Direct Experience (which is convergent with the phenomenological reduction, Husserl's work, as well as Deep Listening) as presented in this text. Finally, we may begin to speak of these processes in terms of their geometries, as well as the gestures at the level of consciousness which they exogenate and participate in, in order to begin articulating their dynamism.

These unfolding coherencies are occurring all of the time inside the organism; as with vibration, there is never an absence of activity in a dynamical system. We must be careful not to exclusivate our analysis solely to the heightened coherencies embodied by trance, Deep Listening, Deep Listeners, etc., as this would be akin to the ways in which we have exclusivated sound in other arena – through manufactured bourgeois', through empirical manufacture, as well as through perceptual habits of filtration (for example, we habitually project an experience of silence as absence of vibration upon an acoustical space which is thoroughly dynamical and filled with vibrations merely beneath our perceptual amplitude floor [p. 359-362]). In the case of

coherencies, we would be projecting an absence of dynamical activity upon ‘ordinary’ experience, including ‘ordinary’ musical experiences.

In focusing exclusively on heightened coherencies as being more significant, we would manufacture in the realm of listening and musical process a new sort of expert mentality (Smallwood), wherein those who achieve heightened coherency are the experts¹⁴, and everything else is discarded or devalued. While we have not gone to that extreme, I would like to warn of the possibility, in order to avoid it. We must understand the full range of dynamical activity in the organism which music interacts with in the geometries of this dynamical unfoldment, and the general phenomenon within which these particular cases of heightened synchrony occur, both to understand the true significance of particular phenomena (such as heightened coherency), as well as to ferment a broader understanding of musicking and consciousness (and to avoid the creation of a new form of vibrational bourgeois with our exclusivities) as they normatively unfold.

Mandelbrot discovered that complex structures in nature could be the iterative resultant of very simple rules (Mandelbrot) at about the same historical moment that Oliveros discovered that simple instructions given to a group of participants could create very complex musical resultants. We might say that one discovered the nature of fractals as an exterior observer of them (Mandelbrot), the other as an interior,

¹⁴ Ostensibly the ‘listening experts’, or the ‘trance experts’, etc.

active participant in/fomenter of their generative unfoldment (and, as in Schopenhauer's aesthetic contemplation, one where 'perceiver of object' has given way to a merging with the activity at hand – Oliveros' work is perhaps a culmination in music of the gesture Schopenhauer began 150 years previously.)

Significant contemporary theorists explored in this text include American philosopher Alva Noe and the enactivists (including neurobiologists O'Regan and Denaagar), who argue for a new cognitive understanding which locates its activity within the sensori-motor engagement of the organism in relation to its environment (O'Regan and Noë) (Noë) (Degenaar and O'Regan), and not in the realm of reductionist process. In Molnar-Szakas and Overy's seminal study on mirror neuron function, a trans-spatial, trans-temporal infinitude in interactivity with the creative unfoldment of the human being via the neurobiology is corroborated as a tenable perspective on cognition (Molnar-Szakas and Overy). In Ramachandran and Hirstein's "The Science of Art: A New Theory of Aesthetic Experience", a hyperabstractive theory forms an isomorphic link between the neurobiological unfoldment, ideated form, and experiences of art (Ramachandran and Hirstein), one which I extend to the isomorphism's of all nature, and the unbroken fractal activity which Mandelbrot's work unveils. The work of each of these contemporary theorists helps to locate the nature of the geometries of unfoldment more precisely through the lens of biology; I argue that they culminate in, and 'omniangulate' the nature of a generative activity underlying each, which is of the nature of the geometries of the implicate fundamentally. In concert with our own attentional inquires, we thus

uncover the gestures at the level of consciousness which we enact/participate in as human beings, and significantly, which we enact/participate in within the domain of musicking. Furthermore, the enactivist claim that cognition occurs in the interactivity of sensori-motor engagement and environment points towards continuum/flux as relevant metaphor (as Oliveros has emphasized (Oliveros *Deep* xxiii)), highlighting a point of convergence between the two.

There are two ways to approach the bold, often provocative statements of this text. The first is to approach the text as a scientific inquiry in the Bioresonant Laboratory of Direct Experience, as outlined throughout; as contiguous with Husserl's desire for phenomenological inquiry and practice to become a science cross-modally, and to unveil new terrain of knowledge. The second is to consider the attentional inquiries to be performance pieces written for the instrument of attention, performed on the stage of consciousness, and like the longer of Cage's bracket pieces, rewarding to patience in observation of unfoldment. These attentional inquiries, and the intermittent text, may be seen as a duet: as a call and response pair. In the end, the experiential fruit of this engagement, I argue, exists in the realm of the geometries of the implicate.

In both approaches, seemingly uncorroborable statements foreshadow comprehensive processual unfoldment. The reader will either corroborate or refute these claims contingent upon their observation/enactment of this unfoldment, in concert with intellection. They are thus to be seen as postulates, or hypotheses, in the Bioresonant Laboratory of Direct Experience, which the ensuing unfoldment will

address. This work is thus an exogenation of practice as body of information, unfoldment, and corroboration – as an extension of the gesture at the level of consciousness which all of the theorists examined in this brief literature review are an integral part of. It is my belief that they all point to a modus of applied methodological engagement which is an emergent stream in academia.

The methodological transformations of this work can further be seen as co-resonant with modern advocacy for contemplative pedagogy (Schonert-Reichl) (Barbezat) (Lin), wherein a contemplative element complements traditional pedagogical approaches. However, the intense stigma around “contemplative” as exclusively inter-linked with religious activities is problematic. The same gestures at the level of consciousness which contemplative practices outline may be elicited or ‘scored’ using depersonalized, dynamical languaging, rendering any interpolation unnecessary. I consider the attentional inquiries to be a scientific endeavor, an exercise of precise observation; each designed to elicit specific dynamical unfoldment’s in the organism which, as a wholity, illustrate key elements of this work.

“In studying sound, among other forms of stimuli, I’ve learned that it is physically impossible to isolate just one noise, for it was temporary and sound exists simultaneously at every moment around the globe and beyond, while we are just the hearers, the ones perceiving a noise to be isolated, the prism filtering sound. Just as

the earth is technically not an isolated system, neither is vibration...”

- Leah Stemman, student, Sound, Listening, and Consciousness

“First I redirected my hearing inward in order to enter the current of the sages. Then external sounds disappeared. With the direction of my hearing reversed and with sounds stilled, both sounds and silence ceased to arise. So it was that, as I gradually progressed, what I heard and my awareness of what I heard came to an end. Even when that state of mind in which everything had come to an end disappeared, I did not rest. My awareness and the objects of my awareness were emptied, and when that process of emptying my awareness was wholly complete, then even that emptying and what had been emptied vanished.”

- The Surangama Sutra (Sure 234)

The historicity of inquiries into consciousness in the West is riddled with sabotage by unquestioned *a priori* constraints. Similar to Kuhn’s analysis of historical recursions in the sciences (Kuhn), the resultants appear definitive, until these *a priori* constraints are confronted, revealed, and eliminated, and a new possibility for unfoldment is facilitated.

The form of inquiry primarily employed in academic scholarship historically has been of the modus of explicate process almost exclusively. Gradually, we have approached an understanding of implicate process in the West which is a remedy to

these problems (Bohm *Wholeness* 186-190). The most significant challenge to the integration of implicate process is the requisite demand that a processual transformation be enacted in the modes of scholarship employed, and that old modes be discarded where they are found to no longer serve coherent scholarship. These old modes are often implicated in profound resistance to their own outmoding. In the inquiry into consciousness, the solipsistic aspect of this process is amplified due to the proximity of the subject of inquiry to the activity animating the inquiry, wherein every germ of unquestioned *a priori* assumption becomes hyperbolized in the processual unfoldment resultant.

Arguably, Schopenhauer's 52nd section in *The World as Will and Idea* marks a historical moment wherein the Western mind turned towards a deeper appreciation of the unique value of implicate process, and away from the implicit deification of explicate process as end in and of itself, which had been enacted almost exclusively prior. This movement, this historical gesture, began in the domain of aesthetic inquiry, and has gradually ripened to become the possibility of a whole new methodological direction in academia. This text attempts to make a humble contribution to this unfoldment, and to methodologically facilitate new understandings.

In the above quote from *The Surangama Sutra*, the process described in the historicity of inquiries into consciousness in the previous paragraph is mirrored in the microcosm of sonic cognition. From an exclusively linear and compartmentalized notion of the cognitive signal chain, 'the emptying and what had been emptied' simultaneously vanishing is a phenomenal unfoldment and signal chain which cannot

be accounted for, let alone made sense of. However, if consciousness is understood to be of the nature of multi-dimensionality (as proposed by musicians [Oliveros *Deep* 15] and neurobiologists [Bolay]) alike), inter-nested orders (as proposed in the domain of physics [Bohm *Science* 297], and reflected in Indic notions of cosmology [in notions such as Nad-Brahma {Berendt 15-51}, and extended into consciousness in both instances]), and thus processual unfoldment (which, like music, contains both linear and non-linear process in perfect simultaneity), then this statement can not only be made sense of, it may inform a practical methodological unfoldment which opens new doors in the realms of both music and ontology.

Eastern texts are frequently engaged with an implicit methodological unfoldment; not just one artifacted by human vanity, but one which would occur even if the text had not been written. Thus as Westerners we should not say “the Vedas said this”, and so it must be true; any authority is resultant of self-evidence upon enactment, not cultural valorization. What is important is that we engage in a processual unfoldment which self-revelates directly, and eliminates an abstracted signal-chain of exteriorized authority ‘in the process’. Perhaps we would arrive at a similar place, without needing to rely upon religious or any other authority.

This is a perfect metaphor for what I believe the processual inquiry of this text should be. Western scholarship has approached over the last 200 years an understanding of what is implicit beyond the explicate processes of its normative modus of inquiry, and the emergent leading edge is an understanding of an exogenation of this which leaps beyond the page, beyond the idea, and becomes self-

revealing itself. I ask the reader to join me in this inquiry, to see what ensues when our modus operandi is transformed radically upon this praxis. I believe that all of the theorists discussed in this chapter were involved with the creation and engagement of methodological process which, due to its contiguity with implicit process, unveils this 'in the process': they are each explicate technologies for exploring implicate process¹⁵. We are in a habitus of listening, and we don't even know it half the time. The question is, what are we going to do about it¹⁶?

The first section of this text focuses upon establishing an understanding of the implicate order, implicate/explicate process, the modus of consciousness inquiry employed in this text, a unique approach to the empirical and the subjective/objective terrain, the authors lived experience from this perspective, as well as the resultants of pedagogical unfoldment which have inspired many of the inquiries of this text.

¹⁵ As mentioned before, a more rigorous understanding of implicate/explicate process will be unfolded throughout.

¹⁶ The struggle of this text has been in bridging it to a broader audience. It was written primarily with Pauline Oliveros in mind. Pauline is an embodied practitioner of the highest caliber, as is most of the Deep Listening community that rose up around her. To an embodied practitioner, many of the inquiries of this text are already self-evident in terms of relevance, and do not need explanation. However, I would like to build as many cross modal bridges as possible, and to invite the reader of any academic predilection to benefit from entering into a conversation which I have found to be so personally valuable. I have not relied upon traditional modes of intellectual inquiry, but rather invited the reader in through the avenues of unfoldment the process elucidates, which in turn reveals new modus' of intellectual inquiry. It is a difficult approach, but it is an honest one, and it is one which does not reiterate habits; thus it is also a self-consistent approach.

The second section begins to explore musicking, listening, the bioresonant laboratory of direct experience, neurobiology, and dynamical systems more deeply using the foundation established in the first section. The final section arrives at understandings of unfolding coherencies, unfolding process, neurobiology, cognition, and music which are the culmination of all of the examinations of the text. It arrives at rigorous understandings in the realm of intellection which are built upon the foundation of that which has been unfolded in the Bioresonant Laboratory of Direct Experience throughout.

First attentional inquiry

Please perform the following¹⁷:

(10-15 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds around you in your environment. Consciously drop expectations, judgments, and pre-conceptions about sound. Simply allow sound to be as it is. If the mind becomes distracted, whatever the distraction is, do not push it away or give it unnecessary attention; simply allow the distraction to be, as well, and gently bring awareness back to sound, continuing to allow it to be as it is.

Essentially we are answering the question “what happens when we allow sound to be as it is”, not through the mind and the normative habits of intellection, but through the body, through the felt sense: though direct unfoldment.

¹⁷ All of the attentional exercises are predicated upon this exercise, entitled ‘allowing sound to be as it is’; the value and importance of this methodological approach will be illustrated by the intellectual inquiries of the text, and will be addressed in the particulars in a later chapter, especially its connection to Husserl's notion of the *epoché* and the phenomenological reduction.

MANIFESTO

Being that the incessant noise of the modern polluted sonisphere, as well as of the similarly polluted modern noosphere, has drowned out the sweet sonorisms of our art¹⁸:

What we must do is to re-compose our instrument, the only instrument by which all music is created; not into new configurations of the self-same explicate recursions that have been habitually and unconsciously reiterated since the dawn of history, but rather:

We must re-compose our instrument, as in to re-gain poise, as in a tuned instrument which simultaneously receives and transmits deeper orders of coherence enfolded (seemingly ‘hidden’) in the fabric of quantum reality, one that is available for the ‘beauty’ inherent, rather than that valorized by the hand of man – one that is available for the full activity of life as it unfolds within the continuum/flux that we find ourselves within.

It is fundamentally an interactive instrument by which we realize the full creative potential of the human ingénue – a shared activity not owned by any individual ‘genius’ or psychological actor – one that is discovered in the interactivity between our embodied process and the quantum field.

¹⁸ Sonorism, in this case, having nothing to do with tonality, and everything to do with what is invisible about sound (excepting those cases where tonality has everything to do with what is invisible about sound).

In the dissipative order of the 21st century, deeper orders of coherence are literally begging to be revealed; the self-organization of the system (Prigogine and Nicolis) (Jantsch), imminent, leaves no path back to the way that we operated before. The self-equilibration of intelligent interactivity, the **coherence** of the system **intrinsic**, is emergent and inevitable.

To continue to employ this instrument as one of reductionist reifications and atomizations of sound patternings (and her [sounds'] processes of enfoldment), 'hows' unfolding inside of an **apparently** closed system - to feign control over sound and sonic experience in the ways enacted historically – is to rearrange the furniture in a prison cell while the key rests neatly in the lock.

We must birth a tradition which is 'not a tradition' in the traditional sense – but which is rather the space in which all musical traditions, perspectives, and activities arise, are fostered, and are cultivated to flourish. It paradoxically maintains its own perspectives while not limiting those of the actors and activities enacted within it – it is the ideal of the mature, individuated human being, expanded into the realm of academic music, into the realm of 'tradition'; it is akin to the notion of 'stewardship', wherein musicking is the 'garden' – it is the cultural implicate when it comes to music, the realized whole: its sole imperative is the living vitality of the activity of musicking on this planet, not the valorization of isolated reductions of such.

It remains undistracted by all else, much less teleological atomizations of itself. All musicks drink from the same pond; one calls it 'music', another 'ongakyu',

still another ‘ngoma’: the water is their shared source, no matter what the word; from whence does this water flow, and **how** does it flow? What is its **nature**? This is my primary interest herein: the generative activity underlying. The discovery of the ‘score behind the score’¹⁹, the script behind the script, the sound behind the sound.

Attentional inquiries, recent advances in neurobiology, and explorations into consciousness, physics, process, and of course, musicking: these metaphors will unfold and reveal **themselves through** unfolding process; as in musicking (a) – an activity which reveals itself, not a noun; as in life (a), an activity which reveals itself, not a noun. It is primarily out of a deep care for the living vitality of this ‘tradition’ – which is in fact the sum total of all traditions, the musical collision of pluralism emerging as deeper, enfolded orders of coherence in the system - as well as all of the traditions of the world that unfold within it - that this text was written.

¹⁹ It may be more accurate to say: “the score behind the score behind the score behind the score” *ad infinitum* as we are unveiling the roots of a generative activity (a) with infinite unfolded orders, leading all the way to the implicate order, which this seemingly hyperbolic metaphor points to; whereas a score (n) is an explicate reduction by its nature, and implies that the underlying generative activity is of a similar nature, which it is not.

Second attentional inquiry

Please perform the following:

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds around you in your environment. Consciously drop expectations, judgments, and pre-conceptions about sound. Simply allow sound to be as it is. If the mind becomes distracted, whatever the distraction is, do not push it away or give it unnecessary attention; simply allow the distraction to be, as well, and gently bring awareness back to sound, continuing to allow it to be as it is.

2) (10 minutes) Shift your awareness to all vibration, allowing that to be as it is. If the mind becomes distracted, whatever the distraction is, do not push it away or give it unnecessary attention; simply allow the distraction to be, as well, and gently bring awareness back to vibration, continuing to allow all vibrations to be as they are.

Essentially we answer the question “what happens when we allow vibration to be as it is”, not through the mind and the normative habits of intellection, but rather through the body, through the felt sense: though direct unfoldment.

THE IMPLICATE ORDER IN SOUND

David Bohm proposed the causal theory of physics, which points towards a more rigorous understanding of the sciences which can be applied across disciplines, including in the realm of music. Most significantly, it is an approach to physics which addresses the fragmentation of consciousness, and the implications of its resultants. Analogous to Oliveros' work with Deep listening in the musical arena, the causal theory has too often been dismissed without being thoroughly understood²⁰. This is primarily because it:

- 1) intrinsically eliminates the presumed relevance of *a priori* assumptions within the tradition, and demands the operation of a broader field of intelligence, and
- 2) this 'broader field of intelligence' demands that process be unfolded simultaneously with intellectual discourse, rather than being isolated from it (and implicitly includes participation in, rather than abstraction from, said process, which in turn reinforces the dissolution of *a priori* assumptions alluded to in #1 above), and thus
- #3) it is centered around an understanding of the operation of whole systems, and not fragmented parts.

²⁰ Despite the fact that it is the only theory which contextualizes all of the phenomena observed in physics coherently, including that of non-locality.

Thus it is very akin to Oliveros' work. Simply put, the causal theory, and Deep Listening, leave nowhere for unquestioned *a priori* assumption to hide; each for different reasons. This naturally arouses not just criticism, but inherent stigma, as well as a reactionary stance towards their work. This is itself an illustration of unfolding process in culture, and can even be considered evidence of the efficacy of the causal theory and Deep Listening²¹, as nothing is reacted to so vehemently as the truth. In both Oliveros' and Bohms' cases, an unwarranted stigma has lingered in their respective traditions, sadly holding said traditions back from capitalizing upon the brilliant groundwork already broken.

Bohm wished, among other things, to integrate non-locality, a phenomenon which physicists had found difficult to contextualize within previous models. The emergence historically of our awareness of the fact of non-locality made it imperative that a hitherto unconscious stigma in human consciousness be unveiled and confronted; a predilection towards over-valuation of 'local' events over 'global' events in their significance.

Oliveros' work, as well, implicitly represents a historical unveiling and confrontation of previously unconscious human filters, and this contributes to the overall stigma, reactionary stance, and lack of comprehension of the true nature of her work which we observe within the musical tradition today. Too often it is considered

²¹ Or at the very least, it is evidence of the need to inquire into the efficacy of their work more deeply.

‘soft’ when it is in fact extraordinarily scientific and precise, if understood rightly. The brain is generally impaired in its function when over burdened by implicit and unconscious judgment, a fact which will be confronted thoroughly in this paper in regards to its implications upon processual unfoldment in the realm of sound, as well as in disparate other arenas.

As David Bohm proposed an implicate order in physics, so do I in the realm of sound; a larger dialectical ‘frame’²² which contextualizes all of the phenomena of the subject at hand by visualizing them in the ‘frame’ of the whole, as a series of inter-nested orders which interpenetrate, co-inform, and co-arise in relationship to each other, within this implicate whole. All of these processes are inseparable from the continuum/flux as Oliveros has discussed it (Oliveros *Deep* xxiii); they are thus not in any way related to our psychological abstractions of such. This we discover in our embodied process, through direct experience, through embodied attentional inquiry, and through various other idiosyncratic means. I invite scientists to consider the explorations of this text as a forum for testing Bohm’s theory: in a processual laboratory not front-loaded by the normative constraints of the laboratories they are used to; it has enormous potential largely untapped²³.

²² This has been placed in quotes because the implicate whole is intrinsically a ‘frame’ which is not a ‘frame’.

²³ Scientists have struggled to construct traditional experimental approaches that address corroborating the causal theory; this is integrally inter-linked with the

These enfolded/unfolded orders are not hierarchical in relationship to each other; they represent the activity of unfolding process in interactivity with the enfolded orders which organize them; they are thus an expression of true intelligence, or vibratory coherence, a territory which we will be unpacking thoroughly herein. Enfolded orders may be seen as ‘higher’ in the sense that they represent higher orders of organization (and thus of coherency potentials); but they are not ‘higher’ in the hierarchical sense, and this becomes essential to understand as we unpack the inter-nested territory which runs throughout this work.

When asked to explain the concept of enfoldment, which is at the heart of the implicate/explicate metaphor, David Bohm described the process of folding a sheet of paper up into a small packet, making cuts in it, and then unfolding it to reveal a patterned sculpture resultant of this process (Peat and Briggs). The organizational germ of the sculpture is enfolded within the cut packet of paper. A piece of music is also an illustration of the concept of enfoldment: the score represents an enfolded order which the musical performance is the unfoldment of; the processual exogenation of.

arithmetic paradox Schopenhauer poses, as well as the implicate principle as we will define it herein. The bioresonant laboratory of direct experience is, in fact, the only appropriate forum for this inquiry; the causal theory must be corroborated therein as it goes 1) beyond the scope of the explicate frames of the traditional scientific laboratory, and 2) into the nature of consciousness unfoldment – which is further implicit to the resolution of the arithmetic paradox.

In each case, an enfolded order (represented metaphorically by the cut, folded up piece of paper, and the score, respectively) is unfolded (into a paper sculpture and a musical performance); the unfoldment is intrinsically contained within the enfoldment, while simultaneously the enfoldment is intrinsically contained within the unfoldment. The phenomenon is thus of the nature of a hologram.

Bohm then goes on to describe how cognition of light is another example of enfoldment, wherein the entire room is enfolded within the light in the room, and the eye and brain unfolds this (ibid.); sound cognition is similar, wherein the particulars of the acoustical space, the instrumentation employed, etc. is holographically enfolded within the sound itself. When we place attention upon sound, our brain and ear unfold these particulars to the degree of detail which our listening aperture allows for (for example, if it is ‘focalized’, or ‘globalized’, or however else it is aligned in that particular moment). But the organizational information existed before we placed attention upon it, enfolded within the phenomenon.

In each of the examples given above, an organizational order is denoted as enfolded in relation to an unfolded order, and vice versa. At the level of the whole system, the implicate order is the whole within which all of these explicate orders processually unfold²⁴. Simultaneously, an enfolded order may be said to be implicate

²⁴ This challenges the normative habit of viewing within/without as being exclusively spatial; instead, we must understand the usage of within/without here to be intrinsically processual, holographic, and of the nature of inter-nested orders.

in relation to an unfolded order, while that enfolded order may still be denoted explicate in relation to the implicate whole.

Thus the whole is enfolded within all of the explicate processes, just as the particulars of the space are enfolded within the light and sound in the space. One may visualize the implicate whole as the folded-up, cut paper, or the score; it unfolds to become our entire universe. But this is a deceptive metaphor if taken as an absolute (as are all metaphors if taken as absolutes): in fact the implicate whole is both enfolded holographically within every atom of the universe (and thus within the molecules of the score and sheet of paper), while simultaneously no phenomenologically observable ‘thing’ can be said to be its generative seed in terms of a hierarchical, one-directional signal chain, as both the cut, folded-up sheet of paper, and the score seem to imply metaphorically. The implicate whole is enfolded within every atom of creation holographically; this particular quality is not captured by these two metaphors.

The implicate order is referred to as implicate because it is phenomenologically self-evident that all explicate processes (processual unfoldments) occur within it, and as a resultant of it²⁵. At the level of processual unfoldment and

²⁵ This will become self-evident in the processual inquiries of the text, which inter-link the terrain revealed by the phenomenological reduction, the perspective of transcendental subjectivity, and the implicate methodology with the implicate order. While Bohm never articulated this angle specifically, I believe it is implicit in his choice of terminology, as well as approach to phenomenal analysis through the lens of physics (Bohm *Wholeness* 186-190).

empirical observation (and thus from the purview of the conscious observer), which are vital to this text, we may also define explicate/implicate orders thus: explicate processes are what we do, what we put into motion, and implicate processes are what actually happens, or occurs. Our relationship to this praxis becomes the vital nerve center of all of our musicking activities²⁶ processually. As the former grows nearer to the latter, an essential state transition shift occurs which is the most important phenomenon in 20th century music.

Bohm observed in the sciences disparate orders of explicate process (such as scientific intellection) being explored under the false assumption that the knowledge gained from their study could be universally applied and generalized without understanding the particulars of the perspectival transformations of the observer extrapolated outwards (Bohm and Peat 54-57); this is similar to the contextualization of the value of personal experience within anthropological studies from the

²⁶ Throughout I will be using the terms musicking and music interchangeably; I believe that this is a useful transitional dialectic to the more accurate, process and verb based ‘musicking’ (activity), from the more comfortable term ‘music’ (n). While I prefer ‘musicking’, I have no problem using ‘music’ and assuming the implicit understanding that it refers to the actual activity at hand, and not to a fictional noun, fundamentally an abstraction of said activity; the metaphorical nature of language and the significance of this, as well as its relation to music, will be integral to our conversations in this text. In this spirit, I will begin to distinguish between the implicated noun (n) and activity (a) based elements of various terminology placed on the table throughout. In addition, I will at times talk about ‘musicks’ with a similar interchangeability (this term usefully applies to streams of musick, as in streams of culture).

understanding of the participant/observer phenomenon, and was the missing ‘x’ factor in unveiling the appropriate contextualization of the information transmitted by the laboratories and instruments scientists were employing in Bohm’s time. I believe this is a perfect metaphor for the state of musicking today: how are we operating the implicate instrument, the one implicit in our very existence; the only one which is given to us, rather than being created by us?

Bohm believed, as I do, that the inquiry into consciousness is the key to unlocking this conundrum. It is the ‘key’ which rests neatly in the lock. Bohm believed that consciousness is our primary access to the implicate whole (Tisdall, Wijers, and Kamphof 61), and wished to liberate his tradition from its own *a priori* assumptions and resultant self-imposed constraints; he envisioned a possibility which extended beyond the limited recursions of historical process as outlined by Kuhn (Kuhn). He saw in the similarities and differences between these historical cycles the emergence of a deeper order of coherence which was in turn the answer to the implicit question posed by them. This in turn points towards an implicate methodology, which we will unfold throughout this text.

In this spirit I propose the implicate order in sound as an integrally useful dialectical frame: a forum for disentangling ourselves from our own *a priori* assumptions, mediative processes, and psychological constraints: it is, quite simply, the prior sonic order to all of our psychological mediations of such, including (especially) those in the realm of intellection. It is prior even to that which we can perceive: for our sense apparatus’, and the body in interactivity with the environment,

is the instrument in this laboratory, and like the laboratories of science, fundamentally an abstraction of the subject which they inquire into. Our access to the implicate order in sound is through the direct experience of it in any given moment; this experience is in some sense an implicate metaphor for it, one which points directly at it: directly at it and its activity in a fashion which, once confronted, in turn changes our musicking.

The total vibratory, unmediated activity within the range of human hearing: it even predates our experience of it in this moment. The implicate whole is enfolded within this (as well as within all other phenomena) – thus we must place ourselves in direct engagement with it, inductively. This context changes music²⁷. It has never been captured by the intellect; it is merely the vanity of human beings to presume that it has.

To understand how it is that the implicate order in sound is transformed into a human musical experience, let us first apply the metaphor of hearing v. listening

²⁷ Another definition of the implicate is the context; from within the unfolding order you inhabit currently, for example, if you unveil the context of your unfoldment at deeper and deeper levels of expression, you simultaneously unveil elements of the implicate orders in which you as a phenomenological appearance arise. As mentioned before, we must be careful not to interpose the spatial metaphor upon the implicate order; for example, when I say “I exist within the implicate order”, which is implicitly true, this implicate order is simultaneously holographically enfolded within every cell of my body, so if I visualize that as denoting that I spatially exist within the implicate order, exclusively, I have confused the meaning of the implicate/explicate metaphor. Simultaneously, the notion of the whole is intrinsic to the enfolded/unfolded metaphor, so it does not exclude the spatial metaphor, either. Thus, we are at the same time inside of the universe spatially, and it is inside of us holographically, and the implicate/explicate dialectic addresses a level of process which includes this.

(Oliveros *Deep* xxii), wherein hearing represents the raw, direct biological input of sound from the implicate order, and our listening activity is what we do to that, how we construct a sonic experience from that. From a superficial glance, this may cause us to assume that the listening activity is comprised entirely of explicate processes; however, this is not true, as the implicate and explicate processes infinitely interpenetrate in dynamical unfoldment. Thus we must understand this dynamical unfoldment, if we are to understand listening. When we look for the line between explicate and implicate process, we find only self-created lines.

How did we arrive at our listening activity, at the constructed experience of musicking which we are having in this moment? Beginning with our *a posteriori* contact with vibration, we have mediated it, and our experience right now is a window into the resultant of this activity – its processual exogenation. We must ask ourselves: what purposes do these mediations serve, implicitly and explicitly? Can we, through examination of them, understand and transform the very ways and means by which we propagate and generate musicking? How did we arrive at where we are in regards to what we are doing to sound at this moment in human history? I argue that the unfolding of our experience occurs instantaneously, apperceptively, and that as musicians we must understand the generative underpinnings of this process, what actually creates it, rather than what appears to create it. To what degree is music the resultant of intentionality? Process beyond intentionality? What actually creates our musical resultants, from a dynamical systems perspective?

Cage spoke to this territory in his notion of returning to ‘sounds as they are’²⁸; not the fiction of a perceptual absolute, an objective perception of the implicate order in sound, which is in fact a *reducto absurdum* (as it is inevitably mediated through the human processes alluded to already) but rather the apperception which occurs as a resultant of the dissolving of the objective/subjective illusion which his work intuited, and which Oliveros’ work has engaged more directly (in the form of a practicum of sound and listening). The processes which ensue from this inquiry are ones which I argue implicitly confront and contextualize the psychological processes in interactivity with listening, cognition, and the construction of experience at a level of rigor which in turn facilitates Deep Listening, as well as becoming the instrument of the activity of life – nature in her manner of operation - rather than the instrument of psychological processes as recursive ends in and of themselves. The processual implications of this are revolutionary.

I believe that when we confront this territory, we become ‘quieter’, so to speak: phenomenologically quieter, as well as perceptually: and thus more available for sound in the degrees of enfolded complexity which actually underpin its organization. I believe that this is why skilled musicians and Buddhist monks exhibit similar patterns of neural synchrony (Dobbs); it points further to a synchrony in our

²⁸ In which he was integrally influenced by Husserl.

embodied processes, as well as in what they exogenate. Before interpretation constructs experience, there is a raw gestalt, uninterpreted; can we be in relationship to this? Conversely, can we not be in relationship to it, implicitly, as it is the generative seed of all of our constructed experiences²⁹? Are we ‘quiet’ enough to experience this directly without the normative filters which exogenate these constructed experiences? This raw gestalt, the processes by which it becomes a psychological experience, and how this in turn is qualified as ‘music’, is critical to the praxis of our inquiry. Even our experience of ‘silence’, is constructed – what lies beyond that filter?

Upon this praxis, the praxis of direct experience, we will find that we may understand the processes of all life and all music as a reflection of this underlying process and its generative activities; that in fact musicking cannot be understood without an understanding of all of life, as at the holographic level of process they are not two. I say this not out of a grandiose idealism, but rather from a pragmatic observation of their activities, and their inseparability, as observed in the bioresonant³⁰ laboratory, and the dynamical unfoldment which it reveals. In this text

²⁹ It is also a phenomenon which is refracted through this constructed experience, and thus self-evident upon empirical and phenomenological inquiry into it.

³⁰ Bioresonance = The quality of vibratory emanation implicit to all material phenomena.

and the processes which complement it, the inseparability of their activity will become implicit and self-evident.

I believe Cage was being poetic; he did not possess an artificial need to hold his words up to a scientific lens; instead he allowed the reader/listener to connect to his work ‘from where they were at’³¹. His purview was much deeper than that constrained by the dominant paradigm, including that of the sciences. It was outwardly a rather matter of fact lens, matter of fact in regards to matters seemingly grandiose (from a traditional purview). In the apparent hyperbole of this was its intrinsic power, as it arrested many of the core assumptions of our tradition, and has changed it for the better since.

‘Sound as it is’ is both simple, immediate, as well as being extraordinarily complex – it may be found in the praxis of direct experience, in this raw gestalt before interpretation, and our mediations therein – as in unfoldment (a), not object (n). If we are to arrive at anything near a rigorous comprehension of the subject at hand, we must allow it to reveal itself in as many ways as possible, and as deeply as possible: thus it requires new methodological means; we must, in a sense, ominangulate the subject at hand with the tools we have been given in the unfolded

³¹ Even though Cage did not engage the practicum of experience as explicitly as Oliveros did in his work, his *facile* in its ways and means, and the level of competence of his own embodied process therein, is implicit in said work.

order which we inhabit, in order to inductively reveal the activity of the implicate which is implicitly beyond the constraints of experience.

There is no way to construct an absence of perceptual and psychological filters, as they are part and parcel of the very activity of the organism; thus as observers, sound (literally) as it is before it enters the body is something which we can approach competently, relate to rigorously, speak about inductively, but only to the degree that we understand this: that it will never be apprehended directly, at least not from the atomized, explicate modus of intelligence we have been conditioned to preference to the point of near exclusion in our current cultural frame. Thus there is nothing 'objectifiable' about 'sound as it is'. This is essential to our conundrum, as well as its resolution.

On the stage of consciousness, the direct experience points to a phenomenon before interpretation, but it is not objective in the traditional sense; I have coined the term bioresonant laboratory of direct experience, and contextualized our conversations therein, as I believe that all musical knowledge is garnered in praxis to this territory. We will be engaging this laboratory directly as a ways and means of unveiling the process behind musicking, as opposed to the process of musicking, which is an unfolded order of the former activity. What is the generative nature of this activity? What animates and organizes it?

One fascinating thing about the implicate/explicate order metaphor is that many phenomena which make sense from the traditional 'frame' no longer make sense from this purview: the objective/subjective illusion, for example, is seen to be

rather a spectrum of shared statistical approximations labeled ‘facts’ at one end, and ‘imagination’ at the other, which interpenetrate and co-inform each other³². Through communication around the fiction of ‘shared’ experience we come to agreement upon a general range of which elements of disparate human experience may be spoken about ‘accurately’; as ‘green’, or ‘loud’, or ‘beautiful’, for example: each is interpolated through ‘shared’ statistical approximations, which, as Alva Noë and the enactivists point out, are intrinsically embedded within the praxis of our sensori-motor engagement with the environment (O’Regan and Noë) (Noë) (Degenaar. and O’Regan)³³. When the subjective/objective illusion dissolves, the entire atomized landscape falls with it, and the inter-nested orders of nature become self-evident (in contradistinction to the illusion of hierarchy interposed upon them by the atomized landscape).

³² These initial cognitive observations are clearly contiguous with a Bayesian approach, as well as with enactivist theory (in regards to the broader sensori-motor engagement); this will be developed further into a more comprehensive, processually competent cognitive theory which emerges from these two as a dynamical conversation indicative of the implicate and explicate modus’ historically, informed by musicking and the processual unfoldment. It is interesting to note that the Bayesian model actually points toward an inter-nested understanding, even though it has been historically interpreted almost exclusively in terms of a traditional hierarchical model of cognition.

³³ Which also highlights the fact that they are impossible to understand separate from the continuum/flux – and as the continuum/flux is impossible to reduce, they must be approached through processual and attentional means which unfold their implicit construction, rather than recursing their explicate processes.

Autistic individuals are observed to experience perceptual exaggerations which render them unable to participate in these social complicities (which are also reminiscent of Chomsky's notion of manufactured consent [Chomsky and Herman] at a neurobiological level) in normative fashion; this in turn tends to nullifies the autistic individual's intrinsic social personhood, contributing to the recursive pathologization of their condition. Listening practices produce self-equilibration in the mediative faculties; I predict that further research into its impact when applied skillfully with autistic individuals will reveal that it can facilitate the missing self-equilibration. Indeterminacy (whether implicit or explicit) is a further phenomenological mirror of the analysis of shared statistical complicities³⁴, as is the supposed causal relationship of the implicate/explicate order.

In some sense the relationship between enfolded orders and their unfoldment is a causal one; but this metaphor breaks down, as do the other two mentioned above. In each case, we can reiterate that there is a statistical spectrum in regards to perception which we attempt to create 'shared complicity' around in regards to what is implicate, explicate, indeterminate, determinate, objective, subjective, *a priori*, etc., all fundamentally to create a field of 'the known'. The possibility herein is to arrive at

³⁴ This will be illustrated further by Cage and Xenakis' compositional process later on in this text.

a place where we participate in these domains no longer deluded by the façade of the objective, the absolute, the deterministic, the explicated, the known, etc. which has become interposed upon them by the atomized, and thus intrinsically fragmented, mind³⁵. As they become extended out in complexity, these shared complicities become institutional agendas, ontological predilections, social stigmas, etc. and are thus integrally tied up with critical social concerns, as well. They tend to create blind spots in our purview, whether in the academic arena or otherwise, and hence the power of really confronting them rigorously at the level at which they exist; not through abstract intellectual process, but through visceral, direct embodied process, confronting the actual geometries of unfoldment/enfoldment which underpin every process of existence, at the level in which they are gestated.

Direct experience, like music (Schiavio 64), and consciousness, is difficult or impossible to define accurately outside of the ‘frame’ which is perceiving it – it is, inevitably, a product itself of multiple layers of psychological process which generatively produce this frame, inherent mediations of the implicate order, even as disentanglement from these psychological processes unveils the implicate order more

³⁵ In terms of languaging, I implore us to maintain a similar coherence herein, participating in the domain of shared meaning while maintaining a sense of their inevitable and implicit metaphorical, and never absolute, quality. Upon this tightrope a deeper order of clarity emerges than that which traditional intellection can impart, and I wish to establish and maintain this herein.

deeply³⁶. It is thus an unfoldment - the direct experience itself being a dynamical³⁷
implicate metaphor – of a different nature than explicate metaphors posed by man.

The processes alluded to above in regards to the unfoldment of the direct experience, as well as an understanding of such, will in turn be unfolded throughout this text: we must discover its activity, like musicking, in the continuum/flux, as its praxis is one of unbroken movement in a domain of not-two which we interpose with the illusion of two. This continuum/flux is a field of infinite interactivity: itself an objective impossibility as a conceptualized object, synchronous with the impossibility of objectivity itself. The direct experience in relationship to our psychological mediations of it are analogous to the relationship between the sonic implicate and our explicate activities which mediate that in musicking: our ways of enacting the enfolded orders we participate in. This inevitably results in culture, and thus the depth of our revelation of the implicate order is concomitant to the depth of our revelation of the implicit creative process which has constructed the generative underpinnings of culture, our ‘frame’ for it, as well as our musicking.

³⁶ It may seem that I am speaking in circles at moments, as I speak through the poverty of languaging in this domain; it is rather of the nature of unfolding process to reveal the constraints of our unfolding metaphors for it, even as they reveal ‘new’ enfolded territory, in dynamical recursion.

³⁷ The difference between atomized and dynamical metaphors will be seen to be a profound praxis of ontological understanding. Music is intrinsically a dynamical metaphor, and one which atomized metaphors have struggled to address coherently.

We reveal the implicate whole as explicate mediations fall away from our conscious purview, unveiling deeper and deeper expressions of the same unfolding implicate metaphor, as well as deeper and deeper coherency potentials to be realized as art. In each case, the relationship is not a duality, but rather one of enfolded/unfolded orders; the imperative to become clear upon their activity through 1) attentional and embodied inquiry, 2) in collaboration with intellectual discourse, 3) in a rigorous study of unfolding process, and 4) in interactivity with one's self as the dynamical praxis of unfoldment, cannot be emphasized enough, and so will be reiterated to exhaustion. It is the only path which does not regress into habitual explicate frames, and the implicit cul-de-sac of atomization therein.

Husserl advocated a return "... to the things themselves" (Husserl), confronting the territory alluded to in regards to Cage above. I advocate a return to the direct experience, which I further argue is our nearest approach to sounds as they are, vibratory processes, and the implicate order in sound: through the window of embodied process, and the implicit attentional inquiries revealed to be underlying these. Musical knowledge, like quantum information, is the totality of a process, and not its reductions. Hence, it is apprehended or apperceived on some level right now; our competence in unveiling this potentiates our musical, processual, and enactment-based competencies, which in turn generate our musicking. The neurobiological and systems-based inevitability of this will become apparent as we proceed.

This further points to an implicate intelligence, a crucial subject of inquiry in a time when the pendulum of intelligence has swung too far towards that of explicate

processes and reductions of the implicate order, naively labeled ‘human’ intelligence, which actually unfold within implicate intelligence - just as explicate process unfold within the implicate order. When the statistical spectrum of complicities have been integrated and contextualized completely in their full unfolding interactivity, through an embodied process of self-equilibration, the implicate and explicate modus’ of intelligence can operate as one coherent whole, and not as fragmented parts. At that point, the word ‘intelligence’ has become aligned with a coherent natural activity, and not an abstraction of human vanity, machination, and artifice. At that point, even an apperception of apperception becomes possible, as well as profound equilibration from within the dynamical frame of our ‘experiencing’.

Oliveros has advocated a return to the whole space/time continuum of sound (Oliveros *Deep* xxiii and 12) in her work, an activity which will be seen to be endemic of this implicate intelligence, synonymous with the inquiries of Cage and Husserl outlined above, and which will further be seen as the only way of resolving the historical hyperboles discussed herein cross-modally, as well as in the realm of music³⁸. The direct experience is also our direct access to this continuum, in which all musicking and life processes occur; it is a feedback³⁹ laboratory of infinite potential, a

³⁸ And thus resonant with various streams, from different languaging perspectives, and from different purviews of the dynamical system analysis - the return to ‘sound as it is’, or ‘things as they are’, the phenomenological reduction, lacanian theory, etc.

³⁹ In alignment with Cariani’s notion of ‘perception-cognition-action loop’ (Cariani 2001, 2003), which we will develop further in later chapters.

complex dynamical system which is the stage upon which all musicking has been enacted since the dawn of time, and whose chaotic resultants are ‘*rasa*’, ‘soul’, the coherency apperception: phenomena which lie at the center of all creative processes, all value formation, as well as all listening and musicking.

Implicate intelligence is precisely what the name implies; a naïve understanding limits it to the phenomenon of inborn tendencies within the organism, such as those towards certain structures in language formation, musical understanding, action, etc. This understanding is embodied and illustrated by Piaget’s notion of genetic epistemology (Piaget *Genetic* 1970), which points towards evidence of implicate intelligence, without ever being consciously aware of it. The structures which genetic epistemology outlines are an unfolded order of implicate intelligence: they are indeed implicate from the frame of the conscious observer (and do reveal inborn tendencies as a phenomena), which is in fact an unfolded order of their activity (so it was quite natural for Piaget to presume that they were the generative source of their organizational structures, or an enfolded order of them, as he had not inquired beyond this frame), but explicate from the ‘frame’ of the implicate whole, and thus a fragmented understanding of the totality of process which the term implicate intelligence, or true intelligence, points towards.

As competent professionals in the 21st century, we must be responsible for our own frames, and consequently, what they exogenate: we must become implicitly responsible for bringing these frames to awareness and contextualizing our work

within the understandings which this process unearths⁴⁰, so that we do not repeat the mistakes of the past. Piaget's and others' artificial glass ceilings in terms of the inquiry into intelligence will be seen to be a reaffirmation of the importance of uncovering the hidden *a priori* assumptions and processes underlying our frames in countless instances throughout this text.

The implicate/explicate metaphor is always in relation to the particulars of a frame of interactivity between them; unless we speak to the implicate whole, which is implicitly the space in which these frames arise⁴¹, whether we are speaking of such in terms of physics, the sonic implicate, or the implicate in regards to consciousness, which we will approach soon⁴². To ignore the body and the consciousness in

⁴⁰ This is analogous, once again, to the revelation of the role of personal experience and history in the contextualizing of the observer/participant phenomenon in ethnographic studies post-colonialism. Frames denied will influence the musicking activity in a similar fashion to the in which frames denied in the political arena will influence the unfolding activity therein, frames denied in the scientific arena will influence the unfolding activity therein, etc. interposed upon all arenas of life. Thus when I say 'mistakes of the past', I do not just refer to the history of colonialism: I also refer to that of racism, genocide, the limitations of historical recursion described by Kuhn in the sciences, as well as disparate phenomena across all other human domains which mimic these, including in the heavily mediated arena of sonic cognition which acts as a processual analogue to them, and which we will be inquiring into deeply here.

⁴¹ At which point interactivity resolves into activity, as two has become not-two. To clarify again, all explicate processes unfold within the implicate whole processually, not necessarily spatially.

⁴² Once again, there may also be said to be particular cases of implicate orders in relation to unfolded explicate orders, as well as the general case of the implicate whole in which all of these arise.

examining musical process, for example, is analogous to ignoring the participant/observer frame in anthropology; it renders one blind to the context of the phenomena, and thus the underlying generative activities which animate it; musicking is thus enacted largely unconsciously. Is the impact of these unconscious frames upon the listening body analogous to the impact upon indigenous cultures of field work before post-colonialist critiques reoriented the normative methodology in a more constructive direction? This question will answer itself in the unfoldment of this text.

To reiterate, the implicate order in sound, on the surface, is quite simple: it is enfolded within the total vibratory activity which arises within the range of human hearing, and as such is immanent. It predates musicking, ideas about musicking, and everything else which we consider musical. It even predates our mediation of it in this moment.

The recognition of such highlights the fact that there are enfolded orders of the system not apparent to our conscious purview; it invites us to understand musical process and resultant through this lens: in the observation of the generative activity of life, we reveal to ourselves the true relationship between these two, their interactivity, and more importantly, their shared generative activity: the praxis upon which they are not-two. Our explicate intellectual inquiries will similarly be seen to be not separate from an implicit attentional inquiry which has unfolded at deeper and deeper levels from the moment of our genesis as a musicking organism, both individually as well as in terms of the historical unfoldment of our species - until its arrival at being the

generative seed for the explicate expressions of musicking we participate in today – the interactivities between sound and consciousness which we enact ‘outwardly’.

We will go step by step in this paper. As the knowledge revealed is of a broader order than intellectual inquiry can exclusively lay claim to, it is essential that we operate in a different fashion, that we literally go there together. You have to go there to know there⁴³. By the end of this paper, neurobiological and dynamical systems study will corroborate the fact of this, as well as illustrate its relevance in the process of unfolding the full spectrum of musical possibilities at our disposal, enfolded as they are within the implicate geometries.

I have no interest in proving that my perspectives are “right” and that others are “wrong”; this exists within a dialectical frame which has contributed to many of our historical poverties as an intellectual tradition⁴⁴. I am rather interested in having as deep a discussion as possible, and in further cultivating the living ferment of musicking in the process. If some of my readers end up agreeing with me by the end, that is just a perk, but it is not the essence of my intent. It will be my job to illustrate everything I claim not just from the perspective of the explicate laboratory of

⁴³ In Zora Neale Hurston’s masterpiece, Their Eyes Were Watching God, Janie made this observation to Pheoby (Hurston 230), and the words ring true far beyond the domain of the page, as they elucidate the fundamental nature of the generative process, and our human experience, in that: until the system has been inculcated with a particular generative activity, either from within the ferment of its own state transition shifts, or from the outside, it cannot self-organize around it. We may hearken back to times when the words of poets, artists, and their creations, were considered with more weight than they are today; for word, and music, are signifier for an activity more fundamental than either, and the unveiling of this may be said to be the goal of this text.

⁴⁴ Camlin engages in a comprehensive review of this dialogic terrain in “‘This is my truth, now tell me yours’: Emphasizing dialogue within participatory music.” (Camlin)

intellection, but from the implicate laboratory, as well; thus we must all engage in both laboratories simultaneously, together, in order to create shared process whose interactivity with intellectual discourse is integral to its concomitant coherency unfoldment. Thus I encourage all of us to apply equal rigor to the attentional inquiries as to the intellectual inquiries (which significantly use the attentional faculty as processual lens upon the unfoldment it is embedded within); the two will operate as one whole, as in one continuum. As in an instrument being used as it was intended to be. I emphasize this to the point of exhaustion because of the existing stigma around what has been dubbed ‘experiential approaches’. In the end, we all have to ‘go there to know there’; nobody can actually take us there, and everything is an ‘inside job’. Thus integration of the praxis of the experiential represents one of the most important challenges to modern intellectual rigor. If it helps the reader to consider these attentional inquiries, rather than experiential approaches, then please do so. The words are in fact inconsequential to the actual geometries of unfoldment, in the final analysis.

In the instance of this paper, the explicate laboratory is that of the intellect: it will be seen to contain infinite metaphors for consciousness, musicking, and everything else extant in life, and this metaphorical quality will in turn be seen to be essential to its strength as a tool. It is the reified landscape, and offers infinite potential if, as mentioned before, we keep in mind the fiction of the absolute, the

determinate, the objective⁴⁵, etc. and its nature as a tool, and not an end in and of itself.

The implicate laboratory is operated through the faculty of attention, as well as through the embodied unfoldment which operates in concert with this, and which is resultant/instigator of it simultaneously. It is essentially the laboratory of the continuum, that of the universe itself, our nearest access to such: the bioresonant laboratory of direct experience. An infinite feedback laboratory, a complex dynamical system which we influence (but never control) with our attentional interactivity; one in which imagination, as well as all musical inquiries, ferment, ripen, and unfold as the explicate activities of our art - whether they are of the nature of canonical interpretation, four minutes and thirty three seconds of ‘silence’, or listening to birdsong. How do we actually influence this unfoldment (as opposed to the vanities by which we have framed this activity up to the historical moment)?

The dialogue in regards to consciousness and musicking will be deepened, and vital new intellectual territory unveiled, through the similarities and differences observed between the activity of phenomena explored from each purview⁴⁶; the

⁴⁵ Our neurobiological inquiries will strengthen the veracity of these positions.

⁴⁶ Bohm has encouraged all disciplines to employ this methodology; of treating the contrasts and similitudes of apparently incommensurable and opposing views as revealing emergent lines of discourse, as opposed to atomized stopgaps in the flow of conversation filibustered in the presumed need for validation of notions of

chaotic resultants of a dynamical system, for example, appear very different and unveil different implications in regards to the nature of said systems when observed from within a system, and from without it. In the convergence of these purviews, the limitations of each are revealed, and new directions are further revealed ‘in the process’. They are, I argue, the leading edge in regards to consciousness and musicking. In addition, they allow for music to be the forum which it ‘should’ be for elucidating essential truths vital to transmit across disciplines, towards the larger ferment of academia and culture as a whole.

As we perform each of the pedagogical listening exercises, or attentional inquiries carefully placed throughout this text, we should consider the data transmitted therein as vital to our exploration. We must not dismiss this because it is not of the nature of the atomized data we are accustomed to. New understanding requires new methodologies. I further encourage us to treat the act of contextualizing this data set as one of self-equilibration, and its contrasts/convergences with traditional approaches in turn transformative as they refract both the activity of our ‘experiencing’, and our ‘interactivity’ with the universe which animates it, in every sense of those words: especially in terms of our notions of intelligence, consciousness, and musicking, as being the dynamical unfoldment which we are all intimately involved with, all of the time.

beauty/value/rightness/etc. intrinsic to the objectifying habit. Here I merely extend it to the implicate/explicate metaphorical and dialectical lens which I am establishing.

Third attentional inquiry

Please perform the following on the instrument:

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds in your environment. Consciously drop all expectations, judgments, and pre-conceptions about sound. Just allow sound to be as it is. If the mind becomes distracted, do not push the distraction away or give it unnecessary attention; instead allow the distraction to be, as well, and gently draw awareness back to sound, simply allowing it to be as it is.

2) (5-10 minutes) Shift your awareness to the interactivity between sound and consciousness. If the mind becomes distracted, do not push the distraction away or give it unnecessary attention; instead allow the distraction to be, and gently draw awareness back to the interactivity between sound and consciousness. See what happens when you allow this interactivity to be, and just observe it. We are essentially answering the question “what is the interactivity between sound and consciousness?”; once again not through the mind, but rather through the body, through the felt sense, through dynamical unfoldment itself.

3) Recall the inquiry from #2 when you compose, rehearse, improvise, listen to, perform, or otherwise interact with music, and include it in the process. Observe the interactivity between sound and consciousness as the music unfolds, and see how that changes the unfoldment.

APPROACHING THE 'HARD'

'PROBLEM'

Implicit in this entire conversation is consciousness. It is at the center of everything I am discussing, animating it from within. Many who speak to consciousness today attempt to get at a codified, thinged definition of what consciousness "is". This approach will be seen to be a dead end cul-de-sac: an endemic teleological misunderstanding of the very nature and activity of the subject at hand. For consciousness is an activity, not a noun: its generative qualities can only be discovered in the continuum/flux, and our reifications of such have crippled our cognitive competence in this arena historically.

Now fortunately in music we have the absolutely perfect forum for examining this more rigorously: we can approach consciousness from an implicate perspective, as an activity: as an enfolded order which unfolds through 'us'; whatever that last word means 'to us'. Musicking has always been a study of process, from within said process: if we approach any experience; a musical experience in a concert hall, an 'ordinary' experience walking along the beach, the experience you are having reading this text right now: there is some activity of sentience animating it. Clearly, or none of these activities would be occurring. I'd like for us all to stop right now, for a few minutes, and just simply observe that: the phenomenon of sentience, as an attentional inquiry. The raw activity of it underlying experience. Let's apply the phenomenological methodology already established, not allowing our unfoldment to

be interposed upon by explicate processes: if distracted, merely bring awareness gently back to the fact of our sentience implicit in the current-moment experience, observing it, and further observing what unfolds when this rigorous attention upon it is exercised.

Fascinating is the mere fact that we can observe our sentience, as it undercuts the notion of a linear, hierarchical signal chain therein, in favor of enfolded/unfolding orders as being fundamental to the nature of consciousness, similar to nature. It also underlines the imperative that we engage the inquiry of this text in a completely different fashion than normative, as reiterated. We are embedded within these enfolded/unfolded orders: thus, in inquiring into consciousness, what is looking out, is what is the subject of our inquiry. Or: that which is listening, is also that which is the subject of our listening inquiry. This we will refer to as the implicate principle.

If we do not pay attention to this principle, we become instruments of our own recursive conditioning ‘in the process’. This is part and parcel of the territory we will be examining, whether it is in terms of creative process, neurobiology, tradition and culture, attentional processes, artificial intelligence, or any other process as we inhabit it. Thus we must cessate⁴⁷ our normative ways of engagement in order to reveal a rigorous contrast with prior experience which reveals the territory of the experiential

⁴⁷ To use one of Husserl’s phrases.

construction (including in music) at the level of subtle process we are inquiring into: that of direct experience.

Thus, please allow this to unfold through processual engagement throughout. Morphoeleological⁴⁸ habits will inevitably attempt to arrest this process, as this is their nature. The traditional approach of trying to define consciousness is further mediated through an implicit habit of thingness (which Heidegger famously deconstructed [Heidegger 193]); it conceals a sense that, by defining the subject of our inquiry in relation to ‘thingness’, in ‘capturing’ it in that realm, so to speak, we have validated our intellectual rigor. More accurately, we have validated our own (largely unconscious) atomizations⁴⁹ of process, as well as notions of intelligence which reside in the domain of explicate process exclusively. Consciousness is prior to this mediation of ‘thingness’, just as the actual activity of vibratory processes are.

⁴⁸ Morphoteleosis = A generative activity which seeks to recurse its underlying isomorphs as an end in and of itself.

⁴⁹ Atomization = A generative activity which reduces phenomena in the domain of experience. Reductionism is a particular case of the general phenomenon of atomization within the limited domain of the intellect. Atomization occurs at unconscious as well as conscious levels, it occurs in perception, in feeling, in thought (whether expressed outwardly or not) and every other domain of human experience. Experience is inevitably a reduction of the continuum/flux as a resultant of the limited bandwidth of the perceptual apparatus, and thus is a functional adaptation; atomization represents further reduction on top of this which results in the reified, built perceptual universe most human beings inhabit: the ‘experienced real’, in contradistinction to the continuum/flux this veils, and is a reduction of.

Bohm understood this, and his experience is illustrative. He realized that scientific instruments, etc. could never get at the implicate whole in physics, as they will always be observing within the limited frame of their own particulars (Bohm and Peat 54-57). This is analogous to our approach to reductive process in the realm of the intellect, as well as in music: we will always be observing from within the limited ‘frame’ of our own particulars. Unless we ‘out’ this frame, and confront it.

Hence the assertion that the implicate order can only be known as a whole implicitly, never explicitly: never hierarchically, and never atomistically⁵⁰. When asked how to best access the implicate whole, Bohm said, as alluded to earlier, “through consciousness” (ibid.), not through a telescope; this is highly significant to our future in music. The implicate order is the organizer of all of our activities; Bohm encouraged us to discover it through the same instrument which Oliveros⁵¹ did: the

⁵⁰ Which must be understood in relation to atomization as defined herein, and not atomism as historically defined.

⁵¹ This arises from the understanding that, when we inquire into listening, we are simultaneously and implicitly inquiring into consciousness. Thus, returning to the continuum/flux through listening, and accessing the implicate whole through consciousness, will be seen to be synonymous gestures.

implicate instrument. Thus the convergences of these two ‘giants’ work can best be understood in the praxis of the processual unfoldment itself⁵².

This is a perfect analogue to our problem in music: no musical analysis can get at the implicate whole in music, because it is implicitly observing from within the frame of its own particulars: the socio-historical context, the particular associative matrix and perspectival frame of the auditor, etc. Through consciousness, however, it may be apperceived implicitly: but only if one abandons the expectation that it will fit within any atomized frame; otherwise one will reconstruct it from within this frame, filter out everything which does not fit it, and the processual examination will thus fail as a result⁵³. This also inevitably results in fragmented understanding, which we will illustrate herein. Thus our processual inquiry has important implications in the realm of ontology, as well.

Only if consciousness is understood to be an activity discovered in the processual unfoldment, in interactivity (and at a level of interactivity fundamentally prior to that which explicate frames can contain), in the continuum/flux, and intrinsically a totality enfolded **within** the phenomena which **appear** to contain it

⁵² Which can simultaneously be argued to be consciousness, the body, and listening. In fact, they triangulate an activity which none contains. We will continue to unpack this throughout.

⁵³ The analogue between this and notions of cognition will become more and more relevant as we proceed; in fact, by the end of this text, we will have arrived at a theory of cognition informed by the lived practice (and unfoldment) of music, which in turn acts as an isomorphic mirror revealing the fundamentals of musical process.

(from an attempt to interpose a hierarchical signal chain upon nature), can it be understood with any precision. Just as the implicate order is more than the unfolded orders it organizes, so is consciousness more than the activities which it animates in processual unfoldment. And so it is in music.

I reveal my prejudices; my belief is much as Schrodinger shared in the arithmetic paradox (Schrodinger 128); I intend to prove that, through neurobiology, dynamical systems study, etc. we have no choice but to validate Schrödinger's position. Even if we do not agree with it, it unveils hyperboles⁵⁴ too important (and tantalizing) to ignore. In the meantime, I ask you to suspend judgment and 'go there' in consciousness, inquiring in the ways suggested in the attentional inquiries, whether or not we can answer the question of what consciousness "is". Exemplification of process will unveil exemplification of knowledge; as the judgment faculty itself

⁵⁴ The emphasis on hyperboles is further in alignment with Bohm's notion of scientific inquiry (of examining the similarities and differences of seemingly incommensurate perspectives as a revelation of deeper, implied levels of organization previously 'hidden'.) Bohm observed, for example, that principles of quantum physics arrived at in the 20th century could have been deduced from experiments dating to the nineteenth century if this dialectical method had been employed (Bohm and Peat *Science*, 29.) Hyperboles effect on a microscopic scale what Bohm's injunction was meant to effect on the historical scale of Kuhn's recursions. From the conscious frame of the observer, hyperboles appear to be chaos in the system. From an expanded purview, they are nothing less than 'larger' orders of coherence revealing themselves; enfolded orders of the system emerging from dissipative structures, inviting the dissolution of assumed constraints. The illusion of 'incommensurability' produces fragmentation in our apperception of the whole (as well as our music making) and I believe it is a historical imperative to allow all apparent incommensurabilities to dissolve and resolve into an all-inclusive understanding: implicate intelligence.

underlies the processes inquired into, its suspension is vital to the successful and rigorous unfoldment of said inquiries. It goes against every normative stricture in academia, wherein it is expected that one will ‘frame’ one’s conversation ‘to the hilt’. However, we can only possibly have a competent conversation about consciousness because we have no expectation of being able to ‘explain’ what consciousness ‘is’ – what its ‘thingness’ is - just as we don’t feign to be able to say what music ‘is’ outside of the particulars of any cultural or individual frame – and thus we will not filter out the phenomena which arise in the processual unfoldment, as a result.

Through direct experience we illustrate that musicking has been illustrating itself ever since, through the emergent activity intrinsic to our interactive engagement with it. Oliveros has historically invited us to turn around and notice this. In said engagement we reveal music’s generative qualities, how our ‘chosen’ generative activities in relationship to it in turn reveal ourselves to ourselves, and further how this can liberate us from the tyranny of history, ‘genius’, the canonical, the commoditized, externalized ontological authorities, etc.

In fact, consciousness and its particular implications are apperceived implicitly in all musical analysis, musicking, and musicology: this is one of the exciting resultants of the embodied inquiry: it creates a new purview upon the entire historio-musical landscape which we can then look at more deeply, and reveal new avenues of analysis from within. It is a perspectival shift on perspective(s) itself, a sort of total cognitive inversion through which we garner literally infinite new knowledge and creative avenues from everything which has come before, as well as

everything which is occurring in this moment; not just in what has historically been labelled the avant-garde, but across the board⁵⁵. Although I would caveat especially in the avante-garde, as it has pioneered this direction historically and been my primary personal inspiration in writing this text.

Most discussions of consciousness, as I have referred to above, stop at explicate mediations of the actual activity through neurology, ideation, cultural myths, etc. without addressing the fundamental and actual phenomena of it in any sort of coherent fashion: the fact of it. The fact of our sentience. This is primarily because the frame has been morphoteleologically impaired, and the implicate principle is not being employed within a more rigorous framework of processual unfoldment which can inductively reveal the essential implications therein. The neural correlate conversation, for example, is completely reoriented by the preceding discussion, as well as by evidence revealed in later chapters. Quite simply, it is apparent at certain moments in the intellectual process that new data demands new means, and it is the province of those willing to embrace these new means to vanguard the territory that data reveals.

What is essential to understand at this juncture is that our intellectual inquiry into consciousness, as well as the activity of musicking, must be contextualized

⁵⁵ This is not a vain self-glorification of my work, but rather a simple understanding of what occurs when we transition from one complexity space to another.

within the phenomena of our mediations of such, if we are to understand the perspectival transformations of the observer extrapolated outward with rigor. Thus we must study these mediations, which are right in front of us, or rather, right inside of us, or rather, emerging from within us, right now: and 'all of the time'⁵⁶. The very quest to "define" consciousness is coming itself from an abstraction of consciousness; consciousness is implicit; we can garner a wealth of knowledge about its nature if we approach the conversation from a non-teleological dialectic and approach which contextualizes this coherently; if we simply stop and pay attention, rather than rushing to make of attention a reduction in the mimetic compulsion towards masculine endings.

Too often I see otherwise good conversations about consciousness filibustered by the rather simplistic epiphenomenon argument. What is not mentioned is that the epiphenomenon argument is itself contextualized within a historio-cultural context wherein the body has been objectified in a mechanistic fashion which has finally come under sharp scrutiny in the recent past. This activity is fundamentally the ultimate teleology; to arrest the continuum of the body into atomized reductions. It is the most endemically revealing expression of the activity of the teleomorphic

⁵⁶ This little joke is predicated upon the fact that they are also trans-temporal and trans-spatial in nature, as we will see herein.

impulse⁵⁷, and one which we normatively engage in without question. It is just as valid to explore the possibility of consciousness as an epiphenomenon of the implicate order; or of all of nature's processes; or any other frame of inter-nested complex dynamism conceptualized therein⁵⁸, as it is to explore it as an epiphenomenon of the body (itself a complex dynamical system) as a theoretically closed system. It is perfectly possible, as well, to observe the limits of the frame which all of these metaphors exist within, just as we observed those implicit in the subjective/objective illusion earlier; and from that, to observe what is emerging from them dynamically (in alignment with the analytical approach of observing what is emerging from the similitudes/differences of various phenomena).

I am interested in only one thing here: to become radically honest about music and life: *a posteriori*, not *a priori*, and to share that inquiry with the reader. Because of how revolutionary what has emerged from that has been for me. I am interested in what can be directly observed with this sincerity, and then at arriving upon a rigorous understanding which contextualizes it, including the fact that even what we understand normatively about our bodies is an intellectual abstraction of the actual phenomenon as it arises in the moment – the continuum/flux of the body.

'Epiphenomenon of nature' still exists within a linear signal chain, for example,

⁵⁷ Teleomorphic impulse = An impulse which is an exogenation of morphoteleosis.

⁵⁸ As we will explore in terms of musical process in a later chapter.

which eschews the inter-nested enfolded/unfolded order metaphor more intrinsic to processual unfoldment ‘as it is’. Everything we need to understand about consciousness and musicking is right here; all that is required is our comprehensive and rigorous apperception of such from within it, which I argue can only be cultivated through embodied processes which reorient the normative modus’ of attention that veil this.

A musician becomes then a sort of experiential phenomenologist and scientist in regards to sound and consciousness. As a composer, I have spent my entire life studying and exploring how to produce and experience phenomenon in ‘the moment’ which produce meaningful musicking for listeners in ‘that moment’; thus the process is intrinsically trans-temporal. The question of what consciousness ‘is’ is irrelevant, and in fact fundamentally obfuscative, and impossible to answer not due to any deficit or lack on its part but rather due to the particulars of the observational frame which has posed the question. Its activity is what is important, its unfoldment; the filibustering of the conversation around consciousness upon the basis of the artificial limitations of the traditional ‘epiphenomenon argument’ is inexcusable in regards to professional dialogic and dialectical conduct, and shall not be considered an impediment moving forward in this text. I am more interested in the implications of the directly observable fact of consciousness’ unbroken prescience within all of our mediated experiences, cultural constructions, etc., the implications of this, as well as the implications of its infinite interactivity, which extends to the whole of the complex dynamical systems we are embedded within holographically: the implicate

whole in its unity, and the explicate orders which arise from that in their diversity⁵⁹. Thus our inquiry is a reversal of the top-down observation of lower-level systems (and the implicit conforming of them to the particulars of said gaze), into an observation of the unfoldment of enfolded orders into the system we find ourselves ‘hearing out’ from. Just as Bohm unfolded the cut, folded-up sheet of paper into a paper sculpture, and the musician unfolds the score into a musical performance, so do we unfold ourselves. From what do we unfold ourselves?

In the case of the folded up, cut paper and the score, some- ‘one’ made the cut. In the case of life and musicking, the genesis of the unfoldment is much more quixotic and mysterious, lying at the very core of many of our most valued (and controversial) human endeavors. For some, this unfoldment is the resultant of ‘hidden variables’ in the dynamical system; for others, it is evidence of ‘God’; for Bohm and myself, it is the resultant of higher levels of organization, or coherence, which were previously enfolded in the system, and which only appeared veiled due to the implicit limitations of the perspectival particulars of the conscious observer, as well as the nature of the implicate instrument⁶⁰. Each of these three perspectives represents a different purview upon generative unfoldment: one from inside of a seemingly

⁵⁹ We will approach a more rigorous understanding of this in the chapter on complex dynamical systems, as in fact the implicate expression of this phenomenon and the explicate expressions of such operate differently; this contrast further contains essential revelations in multiple domains.

⁶⁰ This further underlines the relevance of the implicate principle.

‘closed’ system which is impossible to know’, another from the inside of a seemingly ‘closed’ system animated by and ‘known’ through an anthropomorphized other, and the last from the purview of a whole, an ‘open’ system, in which all phenomena arise, including the phenomena of the first two perspectives. The first two perspectives represent two; the last, the resolution of two into not-two.

We are ourselves inhabiting a complex dynamical system, the body, as well as the universe, one being an unfoldment of the others enfolded information; both exhibit all of the properties that complex dynamical systems exhibit. I am not interested in ‘hidden variables’ as much because these have been ‘framed’ implicitly; they are a by-product of the atomized perspective, and assumptions about the known/unknown⁶¹, just as the epiphenomenon argument is a byproduct of the objectification habit. They are only ‘hidden’ to the atomized frame.

I am more interested in the implications of the fact that our current frame is embedded within ‘frames’ we intrinsically cannot codify, define, or understand with traditional modes of inquiry (at least not in those the dominant intellectual framework has generally conformed us to); and whose geometries are simultaneously the source of the unfoldment which is framing them. These look like ‘indeterminacy’ and ‘hidden variable’ and ‘god’ from the purview of the conscious observer (and from different alignments therein), and thus will be relevant to our empirical investigation,

⁶¹ One will note that the third perspective does not require known/unknown as a dichotomous frame in order to be coherent.

but are at a deeper level of dynamical inquiry the self-organization of enfolded orders of the system which our instrument can only apprehend through implication, when contextualized within a larger dynamical frame which has been rigorously informed by these concepts of the implicate order, and the implicate principle.

Put differently: all phenomena are, paradoxically, embedded within a ‘frame’ which our ‘frames’ cannot cognize, and which is in fact not a ‘frame’ at all: we only refer to them as such for functional dialectical purposes. Thus alongside discussing attention and all of the processes therein we are going to exercise and enact attention, as well, observing the unfoldment which ensues from that in the organism, and discuss the implications of how these two conversations intersect: this is, I argue, musicking at its core. Action and enaction are the bread and butter of our art, and both inevitably begin and end at the body, itself synonymous with the implicate instrument: the stage upon which all musicking has been played as the last leg in a non-linear signal chain (another hyperbole which our dynamical frame will make sense of). And the interactivity we discover therein is further discovered to be the generative core of all other activities: all life processes.

This has been the implicit musical inquiry since the dawn of time, just as it has been with all other evolving ‘languages’; whose shared water eschews the appearance of syntactical idiosyncrasies and particulars. In terms of academic inquiry, competent theory should be self-evident, not dependent upon structures of its own machination and self-valorization to be coherent, and I believe this about music, as well. The outsourcing of value to exteriorized authorities is a plague upon the

intelligence of the Western mind. This paper will attempt to uproot this, through re-engagement of the *a posteriori*, beyond hidden *a priori* assumptions and processes; intrinsically through embodied process, which is pointedly how music is engaged and unfolded, as well.

As already mentioned, it will not be a theory which champions the new in lieu of the old; good theory should be applicable to new expressions, as well as to extant expressions in the tradition, if it is to satisfy the litmus test of self-evidence. Thus it must be relevant to new interpretation of canonical music just as much as to expressions of the 'avante-garde. It must build bridges, and it must serve the expansion of the tradition, and not just itself as a theory.

Good scholarly work should thus be all-inclusive, as well. It is of infinite more value to discover dialectics and truths that apply to all extant examples of the material at hand than it is to discover ones which only retain value within their own oeuvre. The best of scientific inquiry, as well as inquiry in all fields, should be in alignment with this, as well.

In music, there is a sense that we will either 1) manufacture a new manifesto which eschews and disdains all that came before it, silencing them and changing the entire landscape and conversation of musicking in one bold gesture, or 2) cling desperately to old modes as if they were the only generative activity by which to operate. This is a decidedly morphoteological model, and a severely limited one. An inclusive model, as well as one which seeks to satisfy the other qualities described above, is relevant to the new as well as to the old, and is in turn an embodiment of

implicate intelligence, which, it stands to note, does not exclude explicate intelligence; it merely points to an activity which is not rooted in self-machination.

There is no need to silence any perspectives in this paradigm; as mentioned in my introduction, the new 'tradition' will be: "the space in which all musical traditions, perspectives, and activities are cultivated, fostered, and allowed to flourish. It paradoxically maintains its own perspectives while not limiting those of the actors and traditions which operate within it." Under the litmus test of theory outlined above, as well as in light of this notion of tradition I wish to foster, we can ask ourselves: "how does a new musical theory apply to all extant examples of musicking, listening, and sound, as well as to those occurring in the present moment?" And: "What stage does this theory unfold upon?" For it certainly does not unfold upon the atomized stage normative in the West, which is in fact exclusivating by its very nature if understood at more subtle levels of generative process⁶². We will be inquiring instead upon the implicit stage: the activity and interactivity we inquire into through our embodied inquiry via the instrument of attentional enactment will thus self-evidently corroborate the veracity of such, if the embodied inquiry has the immense value I argue it does herein.

⁶² And thus intimately tied to how we relate to the evolution of cognitive faculties which seem to be predicated upon the filtering out of certain vibrational domains.

Fourth attentional inquiry

Please perform the following on the instrument:

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds around you in your environment. Consciously drop expectations, judgments, and pre-conceptions about sound. Simply allow sound to be as it is. If the mind becomes distracted, whatever the distraction is, do not push it away or give it unnecessary attention; simply allow the distraction to be, as well: gently bring awareness back to sound, continuing to allow it to be as it is.

2) (5-10 minutes) Pose the question “Who am I?” in the field of your internal awareness. Do not answer this question through the normative faculties of the mind, but rather through the felt sense, through the body, through direct experience: via the methodology we have gradually been establishing in this text. If the mind becomes distracted, or comes up with an answer, or tries to come up with a conclusion, do not push the distraction away, or give it unnecessary attention; instead allow the distraction to be, and gently bring awareness back to the inquiry: “Who am I?”, relaxing into that.

THE IMPLICATE ORDER IN

CONSCIOUSNESS

I would like to propose now a dialectical lens in regards to consciousness, in alignment with those outlined previously with regards to both sound and physics⁶³. In the end it must be remembered that these three lens' comprise the discussion of one phenomenon. Each is a dialectics of metaphor; underlying them is a fundamental metaphor of unity and diversity: of inter-nested orders. The explicate (diversity) is unfolded within the implicate (unity) processually; the implicate (unity) is in turn enfolded within the explicate (diversity) holographically. Expanding 'unities' exist within a complete 'unity', which is the implicate whole. Interestingly, this implicate whole is synonymous with each: the physical world, consciousness, and musicking

⁶³ This is particularly relevant because consciousness and matter are generally treated as separate phenomena in the Western tradition. Bohm was intimately involved with the inquiry into consciousness, a fact which is somehow omitted in some circles. I remember one well-known commentator on neurology and consciousness (who I will not name) who I met at a professional conference. I casually asked him 'so you must be familiar with Bohm's work on consciousness?' in order to foster a conversation. He retorted that Bohm did not address this question in his work; I invited him to follow up with several specific passages in Wholeness and the Implicate Order. At the close of our conversation, he still insisted that Bohm did not address consciousness in his work, and I do not know if he ever followed up with the text.

are all one at this level; the individual frames thus triangulate an underlying activity, and this is in turn revelatory upon their nature.

The implicate element of this dialectic is embodied by the fact of consciousness: by the fact that consciousness is implied, as discussed previously, in our very experience and unfoldment of existence itself⁶⁴, as well as in all phenomenon which arise within and from that field of activity: the presence of consciousness again forms a sort of implicate metaphor, one not posed by the psychological processes and intellectual machinations of man, but rather by life processes herself. These are somehow animated ‘we know not how’, yet the answer (activity) is within us, and all around us, ‘all the time’: and we can observe it, enact it, as well as interact with it, and through said enactment, reveal it through the terrain of contrast, similitude, and induction as it changes over time. All explicate metaphors, including those of musicking, point back to this implicate metaphor in that their phenomenological appearance is integrally linked to it as the background in which they arise (Bohm 259). Poetically speaking, all questions posed in the field of the explicate dissolve into the activity of the implicate; it may be said to be an answer without a question, just as sound is.

This can be seen in, for example, two people talking about the ‘sound of rain’, sitting beside each other on a parkbench as rain falls all around them. Whatever

⁶⁴ Including our musical experiences.

phenomena surrounds the conversation, it is the presence of sentience which facilitates the entire enactment occurring for them, as well as for us. Thus whether or not we ascribe consciousness to the ‘sound of rain’ is irrelevant; the explicate phenomenon of the ‘sound of rain’ as a lexical atom points back to the fact of sentience, as it operates through the entire enactment; as it animates it.

There are two ways of talking about consciousness operating in ‘everything’: 1) to anthropomorphize ‘things’ and thus ‘everything’ with human ‘intelligence’ (an explicate notion of a larger activity, critiqued by Heidegger) and to visualize consciousness as thus operating ‘through them’ (a rather ridiculous notion), and 2) to apperceive the impossibility of ‘thingifying’ ‘anything’ or ‘everything’ without consciousness in the first place, and thus consciousness’ reality as the phenomenological ground *a posteriori*. I am referring to the second here.

Let’s try this simple experiment, which illustrates that the ‘hard’ in the ‘hard problem’ is actually a resultant of stubborn patterns of perspectival and cultural filtration in framing the ‘problem’; that both ‘hard’ and ‘problem’ are constructions of the activity of morphoteleological abstraction, and not intrinsic to consciousness:

1) Find an experience in your ‘library of experiences’ wherein consciousness is not the underlying generative activity animating it.

2) Find a phenomenon you are aware of which has not been contextualized, and thus apprehended, through this ‘library of experiences’, and the resultant

perceptual universe which you have built from it. If you answer ‘a white hole’⁶⁵, for example (which you read about in an astronomical journal, as it was purportedly observed by astronomical instruments last month), I reply thus: even barring the experience of the scientists who conceived, enacted, and interpreted these experiments (through abstracted instruments, whose data had to be interpreted by some observer, and thus through experience), as well as the experience of the writer of the article which interpolated this data, you further interpolated the phenomenon through the experience of a human being reading a science journal which reported that ‘white holes’ had purportedly been observed; through the experience of the assumed veracity of ‘scientific data’ as established through shared cultural complicities, through an experience of languaging which was also interpolated through the gestalt of multiple experiences of languaging (forming a lexical understanding), and all inter-nested throughout the personal ‘library of experiences’ alluded to above, etc. which can be traced all the way back to your ‘first experience’ phenomenologically, to the initial conditions of the system. You instantaneously synthesized all of this into an apperception of an imaginative conception of a ‘white

⁶⁵ A theoretical corollary to black holes which has not been ‘observed’ yet.

hole' which was enacted in your built perceptual universe in response to what the journal article reported⁶⁶.

In short, as the implicate principle illustrates (as does the participant/observer phenomenon in anthropology, and the wave/particle phenomenon in physics) there are no enactments which we are aware of that we are not also a part of, and this frames our knowledge domain implicitly. Even if it is 'someone else's enactment' the process of contextualizing that enactment within our own is intrinsic to the process of enactment itself; life is thus inherently participatory and interactive at the level of consciousness, and further, invariably experiential in terms of our conscious purview. This is self-evident. The 'hard problem', as a phenomenon, is no more real than a white hole – it is merely a statistical complicity (which is itself absent of any absolute quality), and the omnipresence of consciousness, the fact of it, is what is most significant.

And the exact same causal analysis is found at play in music. Any enactment that one could hypothetically propose as being separate from the continuum outlined

⁶⁶ Possibly, as the subject in question (white hole) is still not known to exist, the element of the unknown correlates to a sense of novelty, and even a pleasure associated with that, which will become significant in later analysis'.

in the above discussions are abstracted fictions from the purview of direct experience, the implicate order, quantum physics, as well as the implicate principle.⁶⁷

The entire sequence of conversations above could be restated by saying that consciousness is enfolded within every ‘molecule’ of experience. And thus is the generative source of its unfoldment, as enfolded orders invariably organize unfolded orders in the implicate model. As mentioned earlier, we can only ‘know’ enfolded orders inductively, which explains why we cannot address the issue of consciousness directly, or atomize it.

We can also say that consciousness as a phenomenon is enfolded holographically within every atom of existence, a not-so-popular view in the mechanistic paradigm, but one which is decidedly true: as all phenomena are enfolded holographically within every atom of existence.

This poses a problem, in terms of ascertaining the signal chain of phenomena from within an empirical lens, which is integral to our processual analysis herein. If one wishes to establish phenomenologically whether consciousness is the enfolded source of all phenomena, for example, one would have to procure a strategy for answering this inductively, due to the implicate principle and the intrinsic limitations of experience.

⁶⁷ Another way of saying this is that there are no closed systems: only the illusion of such, and this outlines the intellectual reorientation which this demands in order to correct the ontological unfoldment’s we’ve enacted within the fiction of an apparently closed system.

In terms of observing phenomena which appear on the internal landscape, unfolded orders of complexity will theoretically come and go temporally within the organizational background of enfolded orders, thus providing a phenomenological window through which to inductively ascertain the signal chain of phenomena. In this case, the implicate principle, and the fact that consciousness is observing itself, provides a holographic mirror of phenomena in the general case from which we may induct their activity. It stands to reason that, if one observes internal phenomena (of all kinds), and takes careful note of which unfolding phenomena come and go temporally, and which do not, and the particulars of how these transformations occur in relation to each other, then the latter category will represent the domain of enfolded orders in relation to the former, if time and attentional rigor are both applied thoroughly.

This is due to the fact that, from a conscious purview, unfolded orders will invariably represent the exogenation of enfolded orders, and temporally dissipate within the latter as an organizational contextualization. Hence the requisite need for a span of temporal unfoldment to reveal these similitudes/differences empirically; enfolded/unfolded orders should reveal themselves inductively in the processual unfoldment therein⁶⁸.

⁶⁸ One may visualize a temporal histogram, much like the one which will be proposed in regards to coherency apperception later on, which visually illustrates this phenomenological process, and allows one to contextualize its complexity more comprehensively.

Music, as we all know, is a temporal unfoldment. Physically, enfolded orders exist holographically within every atom of existence; in terms of empirical unfoldment, their processual concourse is revealing of ‘what is actually informing what’ when detailed attention is directed as outlined above upon the internal landscape. Thus the temporal ‘coming and going’ of phenomenon is corollary to their degree of unfoldment within the larger signal chain of existence, as it appears empirically and phenomenologically.

From our above analysis of experience, wherein sentience was observed to never come and go, to be omnipresent, one would have to search for another phenomenon equally omnipresent in experience to find another candidate (other than consciousness) for pointing, empirically, most intimately towards our access to the implicate whole. Bohm came to the same conclusion (Tisdall, Wijers, and Kamphof 61). Thus consciousness, in its raw form, stripped of artifaction and explication, is our most direct access to the implicate whole - I invite readers to explore the above in the bioresonant laboratory of direct experience as a practicum; it’s more specific application to compositional process, and the internal geometries of the implicate, will be illustrated in the final chapter. In addition, it will be integrally inter-linked with discussions in regards to the intrinsic activity of the brain, Deep Listening, and the exogenation of the implicate activity through music.

The implicate metaphor, and consciousness, are so endemic that we have frequently forgotten they are there, despite the fact that they animate every one of our experiences, as well as every one of our ontological and musical frames, and are

further the instrument or activity which produces all musicking, as well as all life. It is the animating sentence and activity of all of our frames, even if we are convinced that we do not have them. The posing of an implicate metaphor revolutionizes the ontological matrix in which all metaphors are posed exclusively by man; implicate listening, original listening, Deep Listening, gestural listening, and all of the other metaphors for listening we will explore herein will be seen to be an extension of this metaphor. We can begin to expand this and see that all physical and vibratory processes: everything that 'is' in life, are implicate metaphors, as well. They all point back to and are a part of this same implicate metaphor, which invariably points back to the phenomenon and fact of consciousness. The preceding discussions, taken as a whole, constitute the establishment of the implicate element of our dialectical lens in regards to consciousness.

Which brings us to the explicate element of this dialectical lens. We in fact have infinite explicate metaphors, each an illustration of consciousness in her explicate processes, as many as imagination and intellect can provide: the entire unfoldment of life is, in fact, an explicate metaphor when framed by a human observer or auditor (and not by life itself). Each reflects the activity of consciousness in its diversity, as all in fact point back to the larger implicate metaphor to the degree that we are in relationship to them and they reflect the nature of that relationship, as well as the actor (self-same attractor) or lack thereof who has framed it. Thus activity unfolds as a mirror of consciousness. For consciousness animates this entire concert hall; once again we are reminded of the implicate principle: sometimes the concert

hall is realized to be just as ephemeral as the vibrations which sound within it, to occur entirely inside of an observer wherein constraints of within/without empirically, when searched for, cannot be found.

Neurobiology may be one of the best metaphors we have at this time, and thus will be explored thoroughly: it would be accurate, for example, to say that consciousness animates the neural substrate and branching geometries therein, but inaccurate to presume that they contain its whole, the total activity of consciousness. Hence neurobiology is an implicate metaphor, just like music, culture, natural processes, and all of life processes, which reflect, like the refractions of a prism, the light which shines through them, without which we would have no contact with the continuum/flux. We can induct from these certain generative activities of consciousness in its activity of animation as they are exposed in bas relief. For example, the aggregation of said branching geometries in the neural substrate will be used to induct certain properties of the generative activity of consciousness in its particulars in a later chapter; its inter-nested and multi-dimensional properties, isomorphic in turn to life processes.

This activity of induction is essential to our modus operandi; the body is an inductive instrument in relation to the implicate whole, which can never be known through atomized reductions. Implicit in all of our conversations is the understanding that consciousness cannot be spoken about directly without ascribing our own habitual explicate expressions, or 'frames' to it, just like sound as it is, the

continuum/flux, etc.⁶⁹; thus it must be spoken about indirectly and metaphorically, and unveiled inductively; this can then be used to re-contextualize our understanding of the explicate expressions of nature in their processual unfoldment, one of which is music.

Music has nothing to do with the artificial thingness we habitually ascribe; nor does it have anything to do with the hierarchical, the syntactical, the recursive and reiterative per se; 'in and of themselves'. These come into play in explicate processes, in their activity as well as our interposition of these upon them, and reveal the self-same attractor at the center of the complex dynamical system more than they do any absolute or determinate quality intrinsic: they reveal the 'framer'. However, we can induce, through the 'putting into play' of the activity of the unfolding dimensions of consciousness, which are inseparable from its exterior enactment, the generative seeds of musicking. And then we can observe these. Just as we cannot experience 'sound as it is' objectively, only inductively through our direct experience, much of musicking is about approaching something which can never be fully apprehended from the explicate modus, and observing it directly.

And then competently engaging in dialogue in regards to it, whether we are talking about musicking or consciousness; thus a coherent dialectical frame which is not going to collapse into teleology is essential. Our embodied process is already that,

⁶⁹ As all of these point to the same phenomenon.

at least when apperceived as such: a languaging sans syntactical filtration. If we understand that our experience is also an implicate metaphor for consciousness, then all of musicking, and all of life, becomes a laboratory which offers a window into its activity, as well as interactivity. All of these processes are implicate metaphors ‘in and of themselves’, and simultaneously explicate to the degree that we have reappropriated them within the frame of ‘human perspective’. Thus unfolding process exists upon this continuum; we can understand the generative activity of life, consciousness, and musicking through this prism, and in turn understand those subjects at hand through the refraction of that generative activity as interactivity; or rather interactivity in the nature of activity at the level of the explicate, and merely activity at the level of the implicate, as two has become not-two at that point. Once again I may seem to be speaking in hyperbole; it is in fact intrinsic to the unfoldment of the metaphor of unity and diversity that hyperboles appear, resolve, and unveil new territory along the way, and this is further analogous to, and illustrative of cognition, musicking, and life processes.

Hence the praxis of our direct experience is the most profound tool we have for rigorously understanding consciousness, as well as musicking. We do this already in all acts of musicking, musicology, etc.: all can be said to be an exploration and a revelation in regards to the nature of consciousness and its interactivity with sound, each invaluable elements of the overall implicate metaphor. Furthermore, we have made of experience not just a thing ‘in itself’, but rather a bioresonant laboratory, a feedback system for the enactment of the musical art: what spikes in the instrument

are the communication systems of this laboratory contingent upon? What are its implicit algorithms? What happens when we make this laboratory more explicit? When we become, as it were, scientists in a phenomenological laboratory wherein our competence with the implicate instrument prevents the resultant knowledge from becoming abstracted in the way which Bohm described as endemically hindering deeper inquiry in the realm of the sciences (Bohm and Peat 55-56)⁷⁰? In a laboratory that is as near to the direct experience, to ‘things as they are’, as one may get; that is in fact inseparable from this activity, and its unfoldment. In this praxis, we discover the activity of the activity, the interactivity of the interactivity, the score of the score; if we cling to no absolute, the scope of this instrument is literally infinite, for its nature is in fact the instantaneous apperception of an infinitude; this occurs as simply as water flows over rock.

Because of the implicate principle, our laboratory contains a completely different ‘data set’. We are exploring the instrument by which all musicking is produced, consciousness as mediated through the body, which is really just one activity. In so doing we can discover our extant skills as musicians in musical

⁷⁰ This is further unpacked and corroborated by Eddington (Eddington). As I pose questions such as these intermixed with the text, they should be understood as outlining cornerstones in the geometries of the inquiry underlying our investigation, from a unique ontological alignment pointed to in this text: not with the goal of being answered teleologically, but rather with the intention of opening up new terrain therein, in the geometries of the implicate, and the domain of the processual unfoldment.

enactment and realization to be tools for unveiling and embodying different orders of coherence (and thus of intelligence and knowledge) than those morphoteleologically preferred by the normative constraints of the dominant culture. This is done simply by recognizing that this enactment faculty extends to the entire concert hall of life, and then orienting ourselves within that. Hence the historical imperative of unveiling this in music is difficult to understate; the implicit processual sophistication in emergent streams of the tradition over the last hundred years (which are difficult to find reflected as rigorously in other disciplines) causes one to wonder if musicking is the only domain wherein Husserl's phenomenological reduction (and other quandaries) may be thoroughly addressed⁷¹.

Is it possible that we can become embodiments of a completely different order of intelligence than that habituated by the dominant culture, at the same time radically potentiating our understanding of, and competence in regards to, sound? And that we can actually do the same for our tradition as an activity which is a natural resultant of this, and in so doing, vanguard new directions for other traditions, as well as the species as a whole? Is this idealistic? Because the collision of morphoteleological ends and the resolution therein by the re-emergence of implicate intelligence is not unrelated to the natural catastrophe we find ourselves hurtling towards 'exteriorally'.

⁷¹ Of course it is not, but there is something to be said about the immanence of the processual in music which this does point to.

Is it possible that the geometries of our inquiry become the geometries of our art, and in turn, the geometries of our listeners' listening activity?

Most engagements of consciousness reiterate endemic reductions which filter the salient elements of the deeper inquiry underneath. One can say with consciousness, once again, that what is looking out, is what we are looking for: the implicate principle; or, in musicking terms, what is hearing, listening, and experiencing⁷², is the subject of our listening: a seeming paradox which will be shown

⁷² I will begin to use 'experience' and 'experiencing' interchangeably from this point forward; in alignment with the approach previously established in regards to 'music' and 'musicking'. Once again I believe that this is a useful transitional approach as the English language catches up with the physical reality of the universe 'as it is'; we neither need to stretch the current languaging paradigm unnecessarily, nor deny the direction that our languaging must evolve in order to reflect reality more competently; if we understand implicitly the metaphorical quality of languaging there is no problem. Bohm stressed this in *Wholeness and the Implicate Order* (Bohm *Wholeness*), and I have stressed it here, as well, so it should be clear by now.

While 'musicking' and 'experiencing' are more accurate terminology in terms of vibrational reality, activity, and unfolding process, they can seem awkward at times within the current languaging paradigm. I believe that our dialectical field is clear enough that this metaphorical quality of language is implicit, that when the word 'music' is used, it is understood to point to the actual vibrational activity of the universe, and not to a fictional noun which is fundamentally an abstraction of such; that when the word 'experience' is used, it is understood to refer to the actual vibrational, unfolding process of 'experiencing', which is what is actually occurring, in spite of old languaging paradigms.

Once again there is no reason to unnecessarily strain the English language as it catches up with the basic facts of physical reality; furthermore, if this attitude were inculcated across the board in our approach to languaging, it would have a transformative effect beyond the scope of this text. For example, music that is performed from a score (which is a form of languaging), approached from an attitude

to actually reveal the hyperbolic edges of our own ontological and epistemological constraints. What would happen if our world stage inculcated this, not to mention our musical stage?

Each of these terms (hearing, listening, and experiencing) are explicate metaphors for the activity of consciousness, fingers pointing at the moon, if you will. Studying their activity is a window into a larger process, which leads us into larger and larger enfolded orders⁷³, as well as the possibility of simultaneously including these enfolded orders and their coherency potentials in the scope of our musicking. They lead us eventually to the activity of all life, the implicate whole, and to the revelation of “nature in her manner of operation” (Coomaraswamy *The Transformation*) – through means which Cage never imagined, as his embodied inquiry was limited to a certain subset in his lifetime that never crossed the divide of conscious embodied process, as Oliveros’ work did. Through embodied observation, one realizes that ‘experience’ (n) is a fictional atomization of process; only

that the score is a metaphor for an activity, rather than a ‘thing in and of itself’, will reflect through process the basic principles alluded to above, and the generative activity of such. It is my hope that this dialectical approach transmits an understanding that the transition from the reified, atomized understandings of the past, and those which engage the continuum/flux, which are our future, is one which can be easeful, not a hindrance or impediment to the process, but rather a catalyzation of it.

⁷³ Which are enfolded in our present domain, and are thus right here and now, in the substratum of the universe; not in some ‘other’ place.

experiencing as unbroken process exists: it is the actual unfoldment of life, through the implicate instrument.

Once again, I am interested only in getting radically honest, and everything which results from this. This requires us to engage the inquiry in a completely different fashion than that of traditional academic engagement. As Thomas Matthew discovered, the marriage of the explicit and the implicit simultaneously supports traditional academic inquiry, and catalyzes it into completely new territory⁷⁴.

What I mean by consciousness is simply this: that activity which this entire discussion points to wards, and which also animates it, as well as all of our experiences. That is the purpose of constructing the dialectic in the fashion I have, as the outlining of the territory of an implicate metaphor, so that life unfoldment on that

⁷⁴ Thomas Matthew was one of my students in Sound, Listening, and Consciousness, and one of my personal inspirations. This was a course I developed and taught at UCSC which employed implicit inquiry (in this case, rigorous pedagogical listening) along with academic inquiry, creating a testing ground for everything discussed herein. Thomas Matthew was a science major who came to me 2/3 of the way through the term asking how he could apply what we were learning in collaboration with his studies in the sciences. Through our conversations his capacity to engage his scientific work creatively, and leave no tenet untouched (that had previously been considered unquestioned *a priori* assumption) by engaging the embodied process with the implicate principle in mind, was completely transformed. I knew this was possible, but seeing it happen in front of me was incredibly revealing and rewarding, and inspired me to understand the larger cross-modal value of my work more deeply.

The students in this class, incidentally, across the board felt the implicate inquiry the class was founded upon potentiated their academic excellence, enthusiasm, and personal satisfaction across disciplines, eschewing its isolation in music.

end of the looking glass answers the ‘questions’ and not ‘me’ as a psychological actor interpolating them, ostensibly as an abstracted authority. It is further the purpose of ‘outing’ the implicate metaphor (just as we must ‘out’ the body, itself not separate from the implicate metaphor), which has been here all along, at the center of everything human. I could say the same about musicking, listening, attention, the direct experience; if the expectation is that I will (or can) explain them (as in to explicate) the reader will be disappointed; what I share is a methodology for revealing their activity, and more importantly, its nature. It is itself self-revelating⁷⁵, just as a human being is, just as life is, and just as music is. This is how honest I would like to be: to place no unquestioned *a priori* assumptions between the reader and sound⁷⁶, and to defuse the vanity of human conceptual frames (as well as the more subtle levels of the atomization of process) along the way. All of these (consciousness, musicking, etc.) are process-based activities, and must thus be discovered in the continuum/flux; in the praxis of the direct experience and our psychological mediations of such. Small’s discussion of musicking as a process (Small) is distinctly in alignment with this. In more expanded detail, I would say that Small’s is a

⁷⁵ For example, if we are completely honest with ourselves, the attentional activities, as well as any piece of music, will unfold differently every time. In both cases, if we stave off the staleness of psychological recursion which would argue with this, our inquiry will be deepened. Thus in our attentional inquiries we must engage each session with an attitude ‘as if it were the first time’; this attitude may similarly be applied to our musicking.

⁷⁶ Reminiscent of the Hippocratic oath.

comprehensive perspective on the unfolding territory of the explicate activity of musicking; here we add the implicate activity to unveil the generative roots of consciousness and life underlying, and to expand that conversation further into the implicit inquiry therein.

This implicate activity is a completely different inquiry; when we talk about consciousness in explicate terms and forget the inherently metaphorical quality of these explicate expressions, we tend to ascribe a sense of ‘realness’ to our discussions at an unconscious level of process which generates a recursive cycle of abstraction, inaccuracy, and incoherence⁷⁷. The nature of consciousness is both to inhabit our metaphors for it, as well as to elude them. The activity of consciousness is of a scope far greater than any of these metaphors in their infinite variety imply, especially when we consider all processes of life as we relate to them to be such.

Hence simply by reorienting the dialectic, and including the embodied attentional process we are already in, we gain both a plethora of data on the one hand by which to study the nature of consciousness, as well as a safeguard on the other against reduction, abstraction, atomization, and the incoherence caused by becoming lost in our own metaphors, our morphoteleological cul-de-sacs. And the attentional inquiries are meant to augment this further; to facilitate it.

⁷⁷ I hope the reader will see by now that the word ‘music’ can just as easily replace consciousness in this, and many of my sentences; in fact, that many of the processual interchangeabilities are meant to illustrate the inter-nested orders which are the actual praxis of unfoldment, and which languaging is generally impoverished to reveal.

Fifth attentional inquiry

Please perform the following on the instrument:

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds in your environment. Consciously drop all expectations, judgments, and pre-conceptions about sound. Just allow sound to be as it is. If the mind becomes distracted, do not push the distraction away or give it unnecessary attention; instead allow the distraction to be, as well, and gently draw awareness back to sound, allowing it to be as it is.

2) (5-10 minutes) Pose the following question in awareness: “what is implicit in experience?”⁷⁸ Answer it not through the mind, but rather through the body, through the felt sense, through direct experience. If the mind becomes distracted, or comes up with an answer, do not push the distraction away or give it unnecessary attention; instead allow the distraction to be, and gently bring awareness back to the inquiry: “what is implicit in experience?”, relaxing into that inquiry. Just observe what is implicit in experience, through experience.

3) Recall the inquiry from #2 when you compose, rehearse, improvise, listen to, perform, or otherwise interact with music, and include it in the process. What is implicit in experience? Or: what is implicit in musical experience?

⁷⁸ We have now established a question-based implementation of the implicate methodology in our attentional laboratory, wherein any question which may be posed in the intellectual laboratory may concomitantly be posed herein, and its unfoldment observed as a means towards locating the inquiry upon the praxis of the continuum/flux and the geometries of the implicate, rather than the field of abstraction.

THE PRAXIS OF PERSONAL

EXPERIENCE

In light of the observer/participant phenomenon and its contextualization within anthropology, the observer/observed phenomenon and its contextualization within physics, the implications of these movements within Western culture at large, as well as the implicate principle, it should be no small matter to inculcate personal experience into musical analysis from a new orientation for the same reasons this has been done in field work studies, etc. I encourage the sciences, as well, to consider the wisdom of this direction in their inquiratorial process: the potential for the sciences to become a deeper fermenting ground for a broader field of intelligence and creative process and dialogue is enormous at this point in history, as Bohm and others have pointed towards.

It is not just because including the 'personal' frame of reference contextualizes all of the activities enacted from within that frame (which executed the research or musical realization, or wrote the text); it is also inter-linked with the hyperbole of the subjective/objective illusion. From the perspective of a complex dynamical system⁷⁹,

⁷⁹ Which the human organism is.

paradoxically, a 'subjective' account or report is in fact the most 'objective' account of the activity of that system, from within the system; one which no traditionally 'objective' account from the outside of the system can get at. This 'subjective' account, this report of the activity of the dynamical system, from within the system, is resultant of the activity of the dynamical system⁸⁰, and thus reveals the entire activity of that system in bas relief; through implication, and through induction. If this is understood, and the 'data' contextualized on this basis, it is more precise than any exteriorized objectification can ever be at revealing the actual generative activity underlying the system in question.⁸¹

Further, a supposedly 'objective' report of the activity of the system, from within the dynamism of the system, is in turn the most 'subjective' account of the activity of the system (if by 'subjective' we inculcate the traditional notion that this is

⁸⁰ And, for example with music, is a resultant of the interactivity of that system with the dynamical system of musicking.

⁸¹ An example of this is may be found in the complexity of neurobiology, and its relationship to experience. Even the most sophisticated visualization of the neural activity involved will only imply, but never encapsulate, the wholity of that which the word 'experience' points to. Thus its activity must be understood by its very means, as well as by the understanding that its resultants produced the enactment labeled 'scientific experiment', as another example. A researcher can report their experience, as it is, and reveal the interactivity between that complex dynamical system (the researcher) and the systems explored quite simply. In the similitudes and differences between the 'data' of each laboratory we reveal the deeper structuring of knowledge at play. This helps to counterbalance the problem described by Bohm in relation to the application of scientific instruments and their relation to our knowledge formation; this obviously further extends to the implicate instrument in musicking, and thus the way we approach knowledge-formation therein.

inherently inaccurate or unreliable): it presumes a quality (objectivity) which is a fictional absolute the system has no way of transmitting in reporting its own activity; thus in feigning to do so, it unconsciously recurses its own *a priori* assumptions (including those inherited from culture) 'in the process': fundamentally generative activities of exclusion at their core. If Pribram's view of the brain is correct, this is quite literally a vibratory fact (Pribram). All the while the system feigns not to distort, the delusion of 'objectivity' only serves to amplify the distortion; it is not dissimilar to Chomsky's notion of manufactured consent, as well as our prior discussion of statistical complicities in cognition, in that the shared reinforcement encourages the presumed 'reality' of 'objectivity' to be amplified unto a singularity which obscures the hidden frames which exogenated the 'objective' report. The distortion thus becomes amplified more and more in direct correlation with the degree of this presumed 'objectivity'; 'objectivity' may thus be seen to be more 'subjective' than a traditional 'subjective' account, from a dynamical systems analysis of the nature of the report of the system, from within the system.

One will note again that the success of mechanical engineering, for example, is predicated upon a complex system of adjustment mechanisms analogous to the various biological filters in the realm of cognition, the parasympathetic/sympathetic nervous system, etc. Their relationship to the statistical complicities of the objective/subjective illusion is rather compelling. Engineering has presumably created 'closed systems' which achieve technological miracles never seen before; in fact they are managing 'open systems' with precise enough compensatory mechanisms

(similar to the human body) in relationship to the environment to function in regards to their intended purpose. The illusion of ‘closed systems’ is analogous to the illusion of ‘objectivity’ in a dynamical report; we will continue to unpack this apparent hyperbole in parallel processing with several others throughout the course of this text. For the time being, I would like to ‘digress’ into the ‘subjective’ in order to contextualize the processes of this paper more deeply. Revelation of personal experience may be seen as akin to giving someone a phrasebook before they enter a foreign country. As I have chosen a particularly broad scope of inquiry, I believe this is particularly important to expose, and so will share my own personal musical experience now. Please keep in mind the above discussion as we explore this: that this is the resultant of the activity of this particular complex dynamical system, and reveals its generative activity through implication more deeply than any ‘objective’ report can:

My own love affair with music began at the age of 12; before this, I had been exposed to pop music and church music primarily (my grandfather was a Lutheran minister; as a consequence, I had been privileged to listen to many incredible pipe organs; I naturally developed a deep love for these.). My mother repeatedly offered me piano lessons throughout the course of my childhood; for some reason, I always refused. There was a sense that to take a teacher was to take a method, and that this would inhibit my natural expression, and I was intrinsically never interested in that. The wisdom of children; even though the above is not absolutely true, it was true enough at the time contextually that it was the ‘right’ decision for my personal path.

Finally, at the age of 12, I sat down at the piano and began to spontaneously teach myself the instrument. I taught myself theory and composition (as well as performative technique) using several good books on the subjects which I acquired at the library. Composition especially came naturally to me; I loved experiencing the unfolding of new iterations beneath my fingers as I explored them improvisationally.

I would sit and improvise, or play from a score, or compose, for hours at a time; 6-8 hours at a stretch that first summer. It was in many ways a form of personal therapy, a visceral forum through which I could disentangle from, and work out, the youthful angst which I didn't understand or know precisely how to resolve. It took me several years to realize just how disconnected my suburban environment really was, and bring this process full circle; piano was one of the fulcrum's of my self-healing which catalyzed this.

I composed and played music throughout high school. In 1995 I attended CSSSA (California State Summer School for the Arts) as a composer. For the first time I was exposed to Cage's silent piece, as well as an atmosphere which promoted new music and the avant-garde. I thrived in an environment that valued my gifts. Though I had teachers, I was still allowed to be my own teacher, and never felt constrained by their presence.

When I was 18 I was in a serious train accident which left me unable to speak, bed-ridden, and dependent upon others for my care for about 5 years. During this time, I became very intimate with my personal sound environment. I meditated often, and my ears gradually became more acute, so that I could make out the hum of all of

the appliances and computers in the house, even those located through several walls. Sometimes I wished I could turn this sensitivity off; I was not physically able to turn the appliances off, as I was bed-ridden, nor could I turn my consciousness off; instead I had to find resolution within their interactivity.

I was graciously able to effect a full recovery from this accident. This occurred entirely through embodied means: through energy healing and other natural healing modalities, which served to further initiate my journey towards highlighting the elements of consciousness and the embodied process we are exploring here.

I enrolled at Bennington College in 2005 as a music composition major. For the first time I confronted the teacher/student relationship, as well as ‘tradition’, more directly. At CSSSA there had not been any pressure to ‘become’ anything; it was just a 1 month summer program, whereas Bennington was a 4 year degree program, and the curriculum was comprehensive.

Looking back, my pieces during this period were *montage-esque*; sharp, discontinuous lexical transformations pointed to the meta relationships of these frames – as if the pop music/church music dichotomy entrained during my youth was emerging and being hammered out through these mutant musicalities, and their convergences/divergences. I fell in love especially with Ligeti of all the modern composers I studied; at the time, his method of producing resultants through compositional micro-aggregation and overlap seemed to point towards something not constrained by tradition, nor by the habitual atomizations of sound; his music represented a phenomenon which revealed something truly ‘new’ to me.

In 2009 I enrolled at UC Santa Cruz as a graduate student, at first in pursuit of a Doctorate of Musical Arts with an emphasis on composition and ethnomusicology. I was quickly steered into the algorithmic track of the music program; despite personal antipathies from childhood in regards to technology and music, and especially MIDI, I was also at a time in my life where confronting my own stigmas (and especially not making choices based upon them) held enormous power for me.

I began to explore complexity at a new level through algorithmic music: at times the level of complexity was so overwhelming that it seemed difficult to engage coherently. There was an implicit question in all of it, of how to make sense of millions of notes which could be realized with a single click⁸².

I spent several years producing music from DNA; I saw the emerging patterns in the complexity as the actual intelligence of life processes, revealed in their unfoldment. I discovered in my own embodied process new forms of coherence potential which algorithmic music pointed towards; it was a fascinating new inquiry. Like Ligeti's music, the resultant of the complexity was often the most poignant and interesting element, the totality of the process and its chaotic resultants, rather than individual atomized constituents therein. 'In the process', I discovered my own means for contextualizing all of this complexity in the body.

⁸² It is no accident that Oliveros and others have reflected a historical collision of technological means and embodied process that may seem hyperbolic, until one understands the necessity for the dynamical system to self-equilibrate the complexity which exists within it.

In 2012 I attended a workshop with Pauline Oliveros which changed my life, as well as my musical direction. It was as if an unrecognized part of myself had been brought alive; as she brought all of us into her embodied process, she simultaneously brought us into our own embodied processes, and there was a sort of joining which occurred in this intrinsically. Not joining in terms of the merging of two, but rather in terms of emergence from a deeper level of the system through the appearance of two; as in when two becomes not-two. In that, new musicking occurred organically which was sourced differently than anything that had occurred before; this reflected a level of interactivity and honesty which I had not witnessed before. Something in me knew that I would not be complete in my musical journey until I learned how to do this, and the next leg of this journey was initiated in that moment.

I witnessed in Pauline a form of courage which is relevant to our processual inquiry into generative activities herein. The world teaches us that courage is to push against something: through war, through argument, through domination of various forms, etc. Prominent feminist, lesbian growing up in the heart of Texas, auteur of the inquiry into consciousness, as well as one of the most (if not the most) important female composers of all time, Pauline was given ample opportunity to ‘push against’ in her lifetime. Instead, she embodied a courage which didn’t need to push against anything, and this was integral to why she was so inspiring. She was so humble: she was simply Pauline, and she didn’t try to be anything else. And the dynamical

resultant of this humility and courage was profound, apparent, and anything but simple⁸³.

I received a Chancellor's grant the next Fall to develop and teach new pedagogical methods building off of Oliveros' work. The resultant class, Sound, Listening, and Consciousness, also changed my life.

In preparing for this opportunity, I studied the facilitation techniques of Oliveros and other master facilitators, as well as theories of cognition, and approaches to the inquiry into consciousness which addressed the territory I was uncovering. I believed that they pointed towards the new directions in pedagogy which I envisioned: an approach that would reflect the wholistic nature of the processual unfoldment of the student internally by isomorphically being that in process (being nature in her manner of operation), and thus locating the student with in that dynamically. I conceived of it as an approach which would counteract the endemic fragmentation of mind which education was compelling students to recurse within their bodies.

An examination of a few facilitation environments (virtual interactive systems) will be illustrative here; they are implicitly analogous to music composition

⁸³ One might say that the 'pushing against' form of courage is an emotive resultant in the explicate modus of generative process, and that what Pauline embodied was an emotive resultant in the implicate modus of generative process. She thus embodied implicate intelligence.

as an open system composed for groups of human instruments, and will thus help to deepen our conversation.

Open Spaces⁸⁴ is a facilitation environment used primarily in the business world. The founders, Harrison Owen and David Belisle, observed that much of the fruitful creative engagement at professional conferences was occurring around the coffee table during breaks between sessions, and not in the conference rooms themselves; there was something about the creative process facilitated by these 'informal' settings which was being suppressed by the 'framing' of dialogic space inherent in traditional conference formats. Wanting to cultivate more of this, they developed Open Spaces.

Most facilitation environments employ simple principles which everyone in the group agrees to participate in enacting; this in turn produces the interactivity observed to unfold in the system. These are essentially shared algorithms. With Open Spaces, these principles are 1) whoever comes is the right people 2) whenever it starts is the right time 3) wherever it is, is the right place 4) whatever happens is the only thing that could have and 5) when it's over, it's over.

This can be seen as a sort of performative score; these particular principles as they unfold in the infinite dynamical interactivity intrinsic to a group eliminate the extraneous filters of judgment upon who, what, where, etc. is involved with the creative process, freeing it up to unfold naturally and organically. Traditional

⁸⁴ For more information, visit: <http://openspaceworld.org/wp2/>

conference models had intrinsically framed the environment so heavily (similar to academia) that they had inhibited creative discourse from moving outside of the constraints of these frames. Open Spaces is a participant driven model of self-organizing systems; my experience with it corroborates its efficacy. Every Open Spaces I have attended has facilitated creative dialogue rich across traditional boundaries, whether ontological or social, embodying an integrative and all-inclusive approach; some of the new techniques I developed for Sound, Listening, and Consciousness were direct resultants of creative conversations at Open Spaces conferences that inspired new ways of looking at what I was developing. Thus the apparent simplicity of the facilitation principles, framed from a certain modus of complexity (that of atomized process), succeeds because of its interactivity with a more fundamental order of complexity – that of the continuum/flux.

Council⁸⁵ is a communications technology based out of the Ojai Foundation. It seeks to facilitate communication that is deeper and more authentic than much of the social discourse we find ourselves involved with today. It can thus be seen to be integrally inter-linked with the discussion earlier on in this chapter in regards to the report of the dynamical system, from within the system.

The four principles are: 1) listen from the heart 2) speak from the heart 3) speak leanly 4) speak spontaneously. Once again these principles must not be

⁸⁵ For more information, visit the Ojai Foundation's Center for Council webpage at: <http://www.ojaifoundation.org/center-council>

examined as intellectual atoms, but rather as a performative score, and in the light of the activity of unfoldment which ensues from their enactment mediated through the human instrument in infinite interactivity with the environment.

In this case, the principles center the activity of communication in a fashion which bypasses the superficial lexical constructions, as well as rote social constructions of context, that social communication is primarily based upon. The heart is a foci of attention subjectively an actors' 'center'; thus the enactment of these instructions creates an unfoldment wherein the report of the dynamical system, from within the dynamical system, emerges from a deeper level of authenticity and honesty than if it was interpolated through traditional filters.

Once again, my experience with Council is corroborative; all of the Council facilitations I have been a part of or led have been delightfully revealing in their capacity to unveil, through unfolding process, a deeper potential for human communication than presently reflected in the world surrounding us.

I came to understand that the interactivity of the group was facilitated in praxis to the territory of unfolding consciousness; that humans enact an invisible score, and that group work (and musical composition) can bring us into intimate conversation with this underlying generative activity in ways which create a profound practicum for the revelation of any subject; beyond intellection, but not in exclusion of it. Of course as consciousness and sonic unfoldment were two of our primary subjects, I also learned that any subject can be exponentially potentiated in its educational transmission when you reveal it in the praxis of its actual unfoldment,

rather than within an abstractive field located separate from that⁸⁶. You could say poetically that what was revealed was a sort of algorithm behind algorithms, or the generative activity underlying, as we have termed it here.

The implicate educational methodology both unveils consciousness in her activity, as well as directs its transformative iterations towards revelation of the subject at hand through the generative activities in turn enacted therein; ‘in the process’, it illustrates the content of whatever subject is interpolated through it in a praxis of generative unfoldment which is not abstracted. It thus returns the subject, and the student, to itself, as well as to the continuum/flux. I realized that musical composition and enactment is an unfoldment of this same process on the musical stage; it thus shared isomorphic generative qualities with it, and the inculcation of this into educational processes emerged organically from my skills as a composer, simply translated into a new arena of enactment.

In designing Sound, Listening, and Consciousness, I decided to integrate a sort of performative score - facilitation principles - in its design, inspired by my study of facilitation techniques— as well as an underlying processual unfoldment which mirrored the cognitive inversion I was seeking to facilitate. These were predicated upon their unfoldment within the dynamical system called ‘the classroom

⁸⁶ Since sonic unfoldment can then illustrate processual unfoldment cross-modally, it facilitated this.

environment'. I decided that my class, like Small's book on musicking, Cage's Silence, Oliveros' Sonic Meditations, etc. - would simultaneously be an embodiment and illustration of process, an unfolding musical composition itself, as well as a technology of potentiated pedagogical self-revelation.

The principles were 1) be present 2) be yourself 3) mine your own experience 4) value others experience.

These implicitly reoriented the student's relationship to the empirical and phenomenological unfoldment which they found themselves 'hearing out' and 'learning out' from. Watching it unfold through the human instrument in complex interactivity was an incredibly eye-opening experience, as it corroborated the value of everything I had been germinating, translating it from the realm of the abstract to the practicum of the classroom environment.

The student's and I successfully realized the pedagogical direction which I had sought to foster: one which embodied and integrated implicate and explicate intelligence as I had begun to conceive of them at that time, simultaneously illustrating these and contextualizing everything in the course in their praxis. I considered it essential that the students engage in a profound engagement and inquiry with their own experience, and implicitly by extension, those of their fellow students'; and to extrapolate from this the necessary processual understanding which facilitated the broader understandings alluded to above, as well as throughout this text. This fundamental insight into the experiential unfoldment we are embedded within had been largely stigmatized by dominant pedagogical approaches, just as the

body, the feminine, and nature had been. As I predicted, these approaches potentiated new depths in the pedagogical unfoldment which pointed towards implicate intelligence.

The students were placed in a situation where it was part of their curricular responsibility to discard the stigma placed upon empirical examination as a laboratory of useful data, and to become sophisticated in the ways in which they were obfuscating their own unfoldment through hidden *a priori* assumptions, processes, and judgment. This was the only avenue which would uncover the roots of the generative activity of consciousness we were seeking to unveil; we found experience to have been reified and framed in so many subtle, habitual, and invisible ways that merely inquiring into the processual unfoldment of sound and consciousness in interactivity opened up a whole new world of unfoldment simultaneously, including intellectual unfoldment. Only through an inquiry into the empirical underpinnings could the actual activity of consciousness be disentangled and laid bare; as this pathway was self-evidently the only way out: hyperbolically the way in was shown to be the way out, which is another way of stating the implicate principle⁸⁷.

⁸⁷ This class, as well as the organization of this paper, both contain self-revelating empirical inquiries. At the same time, I am attempting to expand the definition of what that means; this is a reframing of experience ('experiencing'), cognition, and process, as part and parcel of this work is a recognition of the degree to which we have atomized experience. Listening is like a lens, or like a prism. Was not the 'hard' 'problem' itself conceived in this very laboratory? This is the how of the how, the method of the method, the score of the score: the unfolding orders of quantum reality revealed in processual unfoldment.

I needed to create a mature dialogic environment which was all-inclusive and radically honest, wherein everyone's experience was valued implicitly as more valuable report simultaneously from the individual system, as well as from the larger dynamical system through the individual system; one which held invaluable insights for everyone involved in the shared inquiry. I needed to create a dialogic environment which would not devolve into the explicate cul-de-sacs which traditional environments frequently circle in. In addition, I wanted the unfolding processes of the class to unveil the medium of students own awareness and self-expression as the praxis of discourse, inquiry, and deeper intellectual revelation.

In Open Spaces, Council, as well as in Sound, Listening, and Consciousness, I observed implicate education in action, something which goes beyond simple notions of an inductive educational approach. It is a wholistic and self-revelatory approach, one which facilitates the apperception of phenomena, as well as the whole, which is the actual stage of unfoldment in all instances. As understood from the notion of the implicate order, this whole is enfolded within every element of the system. By contextualizing education within this awareness, we correct the fragmentation of consciousness which has veiled this, and the results were amazing: in the students, in the dynamical interactivity of the classroom, as well as in the intellectual depth we achieved. I developed my own educational strategies which operated within a totally different signal chain domain than tradition pedagogy. These strategies facilitated the wholistic unfoldment which was observed to ensue. They were primarily predicated

upon the cognitive inversion, which re-resources knowledge within the continuum/flux, rather than abstractions of it.

I would, for example, ask students to do a pedagogical listening exercise, and then follow it with lecture, dialogic processes, and other processes⁸⁸ which explored various isomorphic exogenations in related domains to the implicit processual unfoldment in the attentional inquiry at the level of consciousness, and which were thus fractal mirrors of its activity. In other words, the internal dynamism which unfolded in the attentional exercises was paralleled by processes (including intellectual ones) which exogenated the same dynamism exteriorally, allowing the operation of the entire system to be exposed in a broader field of observation which intrinsically revealed its fractal isomorphisms (rather than creating a field of intellectual observation which was intrinsically an abstraction of this). In this praxis, students naturally made connections cross-modally and cross-conceptually that were implicit in these isomorphisms, and this in turn formed the basis for broader intellectual understanding. This was in contradistinction to the methodology wherein intellectual atoms are transmitted with the false ascription of thingness, and the

⁸⁸ These processes included performing musical compositions, interacting with each other in structured ways, as well as dialogic processes, all with the intent, like a musical composition, of creating specific unfoldment's of dynamical interactivity in the space. We could then observe these and use them as a pedagogical laboratory of processual unfoldment, and consciousness.

mimetic recursion of thus, as the basis for intellectual understanding within an abstracted field.

The cognitive inversion this was based upon, wherein the abstracted signal chain is eschewed in preference to one isomorphic to the processual unfoldment observed in natural systems and attention, one which reflects inter-nested, enfolded/unfolded orders in exogenation, as well as the continuum/flux, worked organically, exponentiating intellectual knowledge as much as it did empirical knowledge. I attribute the success of the course to this: that students were engaged in observing the actual praxis of unfoldment, which would otherwise be obfuscated by the artifactual complexity of dense layers of explicate process in academia, and thus information was simple to cognize within the natural resonance and geometries of the complexity 1) which their organism was designed to apperceive intrinsically, and 2) which the information actually existed in.

Intellectual, musical, and other avenues which implicitly unfolded the same generative terrain as the attentional exercises created an environment wherein this processual unfoldment was simply observable, and the dividing line between the interior and exterior easily ‘crossable’⁸⁹. A whole-systems approach = self-equilibrating students, in alignment with the self-equilibrating nature of intelligence.

⁸⁹ As we will see in this text, the fractal unfoldment of ‘internal’ and ‘external’ systems are so isomorphic and inter-penetrating that when one inquires into interior/exterior empirically, one cannot find this dividing line.

Further, students observed the phenomena which unfolded in their own experience first, and when the intellectual information was presented, it was contextualized within that, within the geometries of the implicate out of which that information originally emerged, rather than the other way around (wherein experience would be ‘framed’ by the intellectual information, and contextualized exclusively within that frame), effectively eliminating the implicit violence of structuring knowledge purely upon the abstraction of exterior authorities (a habit which has had devastating effects upon the intelligence of our species over the span of cultural history, reinforcing colonialism, dynasticism, imperialism, the ‘expert’ mentality, notions of genius, and a whole host of other authority-abstraction strategies), as well as the intrinsic incoherence resultant of using the implicate instrument with the same ‘hidden’ frames scientific instruments were being used with, ostensibly recursing these frames in the process.

While the above is a fairly accurate description of what went on in the class, it is still one dynamical step away from the truth. It would be still more accurate to say that as a dynamical system I went deeply into my own embodied process (in terms of the various information and processes of the class) and that the geometries of these unfoldment’s were exogenated through my teaching activity (just as they will be seen to exogenate through music) and organically transmitted in the unfoldment more intimately than they could have in any atomized intellectual environment; so that the geometries of the implicate preceded the explicate, and thus contextualized it at the level of subtle process coherently at a deeper level even than the empirical processes

alluded to above, and that this was in turn the actual praxis of communication⁹⁰. And that, as this level of information is more ‘real’⁹¹ than abstractions of it, this further facilitated the inculcation of intellectual material more easefully and rigorously than abstracted approaches ever could, simply by orienting the generative transmission of knowledge upon the pragmatic praxis of ‘what is’. Students who ‘went there’ in their own embodied process stumbled upon the same cornerstones I had found in mine, and therein was an implicit joining; not a merging, but an emerging from the dynamism in terms of the enfolded complexity of not-two, which we will see is intimately related to coherencing and the activity of music as this text unfolds more. It is what I had experienced when I first met Pauline. In praxis to the intellectual, this expanded into a wholistic rather than a fragmented understanding, and this was reflected in the resultants of the course. The deeper these cornerstones reached in terms of the geometries of the implicate, the more effortless was the learning, as they transmitted the fundamentals upon which all of our artifactual frames were built.

My preparations included not only rehearsing lectures, but enacting the embodied processes deeply, as mentioned above, strengthening and expanding the

⁹⁰ Which is consistent with the cognitive theory which will be presented in the chapter entitled The Vibratory Isomorphism Theory.

⁹¹ We will discuss later how this model is reflected in musicking, in the notion of ‘coherencing’, and in a model of cognition and communication which reflects vibratory and processual reality.

geometries of my own empirical cornerstones⁹² so that I was in a place to artfully 1) recognize when students approached these in their own process, and 2) direct their attention skillfully as they did, in order to increase the statistical likelihood that they would land upon these, and in so doing broaden the field of their understanding. I found in my own experience the empirical and vibratory transmission alluded to above to be implicit in the entire unfoldment: self-evident. Because I invited my students into my own embodied process, I invited them into theirs; because we all ‘went there’ together, the scope of our inquiry (as a dynamical system) expanded beyond the morphoteleological constraints of atomized traditional education into the continuum/flux out of which it emerged - and intellectual inquiry (as well as inquiry ‘beyond’ the intellectual) was made *facile*.

On a good day, I crossed everything off my list of lecture points. Students arrived at everything I had planned to say organically in discussion, through unfolding dialogic processes inseparable from experiential, interactive, and cognitive processes; thus a self-organizing quality of the system emerged through these. I made it my goal to achieve this as much as possible, and throughout the term this is exactly what happened as I amplified my competence in facilitating it; at composing for (and

⁹² ‘You have to go there to know there.’ As each cornerstone was laid, the geometries of the implicate were apperceived more deeply; in a later chapter, we will see how this is the same process of coherencing by which music is apperceived and thus cognized via the coherency apperception faculty.

conducting) this particular ensemble and its implicit unfoldment, you might say. Some days were entirely embodied process, and the teacher didn't say a word beyond the instructions for these processes, as the students got everything intrinsically which the curriculum sought to impart; no further mediation was necessary in terms of atomized intellection⁹³.

If I had employed the explicate model, I would have explained cognition, explained the exercise we were about to do, and then executed the listening practices. This would have inherently front-loaded student's experience, and would have limited the unfoldment within this frame, preventing deeper inquiry into experience and consciousness beyond said framing (which was obviously inherent to the subject at hand, and which is in turn why I have reiterated the necessity of new methodologies so thoroughly in this text). It is analogous to the impact of framing in programmatic music, without implying a value judgment on that idiom, except that it occurs at a deeper level of process. Programmatic music is to implicit intellectual and empirical front-loading, as reductionism is to atomization, wherein the latter in each case represents a subtler level of process. When we frame experience, experience cannot

⁹³ This included very rigorous concepts; several times advanced concepts in chance operations, musical process, and other domains were observed by students in the processual unfoldment, and reported in discussion. I later informed them that so-and-so 'genius' in the tradition had also pointed that out, through their embodied process, just as the student had. Which underlines the fact that the most profound elements of our knowledge base are implicit, and not explicit.

truly become inquiry, or creativity, or intellectual rigor, until that frame has dissolved ‘in the process’⁹⁴. Otherwise, it is just the exogenation of an implicit atomized frame, through unfoldment, just as Open Spaces discovered to be endemic at professional conferences.

The students recognized the elements of their own experience as unfolding process in relation to knowledge, and this freed up their true intelligence to emerge from a deeper place than atomizations of it had previously allowed for; it was the cognitive inversion in enactment, and stimulated academic excellence, as well as listening and musical competence. This poignantly highlights the potential of the implicate methodology in the world of musical education, as well as education at large.

5 of the 20 students reported that the class changed their lives. All non-music majors, they each participated in presenting original compositions (in groups) for their final which exhibited a sophisticated understanding of chance operations, listening processes, non-traditional contexts for art, interactive multimedia systems, and more many of these are subjects not presented to music majors frequently until graduate study. These rigorous understandings were facilitated by the implicate methodology I employed; what had seemed complex became simple when

⁹⁴ This framing in consciousness can be differentiated from, for example, compositional framing of form, and other compositional constraints, as we begin to tease out the details of the levels of complexity being interacted with in the inter-nested orders we explore in this text.

approached through a coherently framed embodied process which reflected nature in her manner of operation, rather than man in his, and in so doing education communicated upon a praxis of complexity which existed prior to human mediations of it. Or: the geometries of the implicate discovered in the processual unfoldment allowed knowledge to emerge organically from that. I have provided a few of the students' reports on their experiences at the end of the term in Appendix E for your purview.

The processes in the class promoted self-equilibration in the student, balancing the explicate and the implicate; the implicate principle in education is that we are speaking to the implicate, what is implied in the student, not what has been framed in/about them. We are speaking to the life processes which emerge through them. Thus it is an approach which inherently liberates us from the tyranny of social and intellectual construction, whether musical or otherwise; 'we', 'you', and 'I' are understood to be more than these, even if we identify with them intimately, as anyone who has been subjected to a stereotype will reflect in their experience. Our dialogic processes thus inhabited a domain of more maturity and sophistication than most classroom environments achieve.

I saw that our relationship to the experiential has become fragmented, and that deep inquiry into (and Deep Listening to) experience contextualizes all of the explicate information presented to us in our data-saturated world - supporting academic excellence, as well as simultaneously personal well-being and self-

equilibration⁹⁵. In process, this is an embodiment similar to personal revelation in anthropology, as well as the contextualization of the observer/observed phenomenon in physics, as has been discussed thoroughly herein. By recognizing vibratory communication (or coherencing) as the actual activity occurring, and explicate expressions of such as secondary to this, the intellectual signal chain was reoriented, and processes were contextualized and deepened in their pedagogical efficacy in a radical fashion which was immediately apparent, and which in turn contextualized knowledge in a sustainable and regenerable source. I was able to transmit orders of coherence in the system that were counterbalances to the traditional modus' of knowledge formation, using generative principles and pedagogical listening as the experiential foci of a field of observation which facilitated this.

It is difficult to overemphasize the historical importance of implicate intelligence at this time; we live in a modern world where over-saturation of explicate information and the presumption of ontological authority surrounding it threatens to disconnect humans from 'reality' to the degree that they destroy the planet and themselves before fully cognizing their predicament. Sound, Listening, and

⁹⁵ As an educator, I am appalled by the degree to which this has been separated from our pursuits. I believe in and feel a deep sense of stewardship for the personal well-being of my students; I believe this is integral to the teaching profession as it has historically been enacted in culture: a sense of stewardship towards the future populace we are cultivating. If this is not our primary motivation in engaging in the teaching profession, then what is?

Consciousness, Deep Listening, emergent streams in the avant-garde over the last hundred years, as well as a diversity of other phenomenon in modern culture point to the re-emergence and import of implicate intelligence, and its primacy in the domain of cognition. It is our natural intelligence, implied in our very sentience; it is the intelligence by which we organize every other form of intelligence⁹⁶, every other coherency ‘framed’; everything else which arises within us and around us. Without it, we are literally dancers in the dark, and our creative future, as well as our future in a larger sense, is rather bleak.

⁹⁶ Multiple intelligence theory can be seen to be an exploration, like Small’s exploration in Musicking, of the explicate multiplicity of the subject at hand. Implicate intelligence is the space in which these unfold processually; it is also the generative activity which animates them.

Part Two: Unfoldment

First attentional inquiry

Please perform the following on the instrument:

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds around you in your environment. Consciously drop expectations, judgments, and pre-conceptions about sound. Simply allow sound to be as it is. If the mind becomes distracted, whatever the distraction is, do not push it away or give it unnecessary attention; simply allow the distraction to be, as well: gently bring awareness back to sound, continuing to allow it to be as it is.

2) (5-10 minutes) Pose the question: “what is implicit in sound?” Contemplate this question as you observe sound; answer it not through the normative intellectual faculties of the mind, but rather directly. Through the body, through the felt sense, through direct experience; through unfoldment itself - just as one listens to music. If the mind becomes distracted, or comes up with an answer, or pursues a conclusion, do not push the distraction away or give it unnecessary attention; instead allow the distraction to be, and gently draw awareness back to the inquiry: “what is implicit in sound?”, relaxing into that inquiry, without needing to arrive at conclusions. This is a laboratory sans teleological conclusions: one of unfolding process. Simply observe what is implicit in sound directly without commentary or interpretation.

3) Recall the inquiry from #2 when you compose, rehearse, improvise, listen to, perform, or otherwise interact with music in the near future, and include it in the process. What is implicit in sound?

If one wishes to go deeper, repeat #2 with “What is implicit in your awareness of sound?” and “What is implicit in the presence of your awareness?”

INTRODUCTION

All life processes, as well as everything we need to learn about sound and music: from vibratory processes, to the psychological experience of man, and everything in between, are **implicit** in the direct observation of sound and her unfoldment, and can be extrapolated thus. Deep listening is also **implicate**, or implicit, in all life processes: it is a quantum potential, or coherence potential; one **poised** to be unveiled, which these processes point back to for those willing to stop, take note, and listen. What is implicit in awareness is an entire universe – constructed – said construction of which we can inquire into, and which said awareness is prior to⁹⁷. It is the stage upon which it is enacted. The life processes implicit in sound extend beyond this construction, yet are in intimate conversation with it.

⁹⁷ This is substantiated specifically by the empirical inquiries presented in the chapter Approaching the Hard Problem, as well as by the attentional inquiries throughout.

What will be presented herein is a series of interconnected and inter-nested unfolding metaphors, both explicate and implicate⁹⁸, that reveal the value and unfolding dimensions of emergent directions of the avante-garde, as well as of Deep Listening and embodied attentional inquiry (as well as the larger issue of embodied process) as windows into larger activities which have eluded traditional discourse so far. This will in turn reveal a new understanding of neurobiology, cognition, and experience from the purview of musicking.

In the process we will elucidate the unfolding dimensions of **all** art, culture, and life through a lens which unveils consciousness as the implicate ‘frame’ within which music, culture, tradition, the self, psychology, neurobiology – all unfold and are animated. Each are **explicate expressions** of this ‘frame’⁹⁹, complex dynamical systems in and of themselves, exhibiting all of the properties of such, and reflecting the activity of consciousness **in her manner of operation**. They further allow us to penetrate its processes through their activity as a lens, or prism: it is thus a multi-dimensional and self-validating inquiry, itself a reflection of the nature of consciousness (both at the level of neurobiology, as well as at the level which eludes that **metaphor**).

⁹⁸ Throughout we will be using the metaphors of implicate/explicate orders developed by David Bohm (Bohm *Wholeness*)

⁹⁹ Once again hyperbole is inter-nested herein; it is a ‘frame’ which is not a frame. However, in order to “frame” a conversation about it, I must refer to it as a “frame”.

The larger notion of tradition alluded to above will be seen to be no different than the transformations in listening suggested herein; a disentanglement from prior forms as well as prior modus' of form-genesis (as well as self-valorization as a generative activity) enacted to unveil an implicit activity underlying and animating them. Implicit in this is **implicate listening**: what humans must be concerned with is not the 'beauty' that they vain to create, but the 'beauty' intrinsic, or prior¹⁰⁰. What I am talking about is, quite simply, the implicate order in musicking as a **cultural entity**, and it represents our future, both as musicians, as well as in being considerate and competent cultural stewards. It is inseparable from the implicate order in sound, physics, and consciousness.

The metaphor of unity and diversity will run throughout. This is an activity-based inquiry; consistent with Bohm's rheomode (Bohm *Wholeness* xiv). It is also a consciousness-based one; we will be establishing a dialectic **a posteriori** to reductionist frames, one that allows us to talk about the direct experience (simultaneously an impossible absolute, as well as being unavoidable, depending upon the purview of the observer) and our mediations thereof, and how this produces

¹⁰⁰ Implicit in the explorations of this paper will be the arrival at an understanding of the notion of *coherency apperception*, as well as its interactivity with neurobiology. For example, how does a composer know when a piece has been finished, when the generative process itself has achieved coherency? I have not seen an inquiry which has approached this rigorously thus far; the entire first portion of the paper will be involved with establishing the appropriate frames and dialectics for these examinations to unfold later.

a musical experience. Upon this praxis we will understand musicking through a lens that **includes** the perspectival transformations of the observer, contextualized within the inter-nested orders of complex dynamical systems that she finds herself embedded within, and in constant quantum communication with; thus process, content, and subject will be united. In these opening sections, I will engage in a fairly broad-ranging dialogue that will help to frame the inquiries that follow within the larger context of traditional dialogues across disciplines. It will further establish the necessary processual lens 'in the process'.

As Oliveros has observed, there are many forms of sonic attention, or listening, besides those of focal and global that she focuses on most explicitly in Deep Listening: A Composer's Sound Practice (Oliveros *Deep* 13); her Sonic Meditations (Oliveros *Sonic*), for example, explore the multiplicity of these in their explicate expression. Importantly, attention is not a noun, but a verb¹⁰¹; how does the sound environment elicit certain responses in the complex dynamical system of attention? How are other responses and enactments constructed from 'within'? Where does the line between these exist, and where does it end? The entire musical canon, in turn, is a mirror of this multiplicity, **implicitly** eliciting various forms of attention through its

¹⁰¹ Attention, especially, is rather bizarre when approached as a noun rather than an activity; when observed directly, this fiction quickly falls away and we arrive at the place where we can begin to have a coherent conversation about it.

activity, a fact generally obscured by explicate analysis' and the presumption of 'objectivity'.

There are implicitly an infinite dearth of attentional forms, more complex than any computer system, reflecting the **activity** of **consciousness in her manner of operation**. This in turn reflects the **unfolding processes of nature**: itself an activity, not a noun in generative interactivity. What the relationship is between these generative activities at the level of attention, and at the level of vibratory reality, highlights an apparent gap which unites our understanding of such once confronted competently. Sonic Meditations, for example, make the implicit activity of consciousness explicit; our entire tradition must expand into and reply rigorously to the full scope of this inquiry if it is to respond to current historical imperatives and move forward towards a cultural enactment which reflects its full potential at this historical moment.

Understanding the activity of consciousness, we understand the generative activity underlying listening, perception, psychology, as well as their resultants: action, musicking, and the unfolding dimensions of life processes as we are in relationship to them. In music, sonic activity unfolding in acoustical space is what we have been involved with ever since: where is this unfolding activity **sourced**? What is the nature of its generative activity, and how can we extrapolate from this the unfolding dimensions of creative activity as a larger issue?

Music has been impossible to define (Schiavio) precisely because to do so would be to arrest an infinite continuum of life processes that proceed in unbroken

and constantly creative activity, frequently in spite of humans: their intellectual reductions of such, their complicit amnesias in regards to habitual and assumed morphogenetic patternings, attentional codifications and their resultant blind spots, etc. that all inherently reduce this activity. We must reconcile ourselves to the fact that any confusion is entirely on the part of the conscious observer: namely us.

There is decidedly no conceptual definition of music outside of the articulation of the particulars of a frame, whether it is a personal frame, or a cultural one. Thus these reveal more about 'the framer' in bas relief than they do about any fictional absolute in regards to defining music (Nettle 16-21). Any asserted definition of music is no more than the vanity of an unquestioned frame, at least if we are talking about music (n)¹⁰².

One can see a way out of this; if one aligns one's self with an 'action-based' definition such as that proposed by Small, which is articulated by participation, and not a reduction of the activity, and which is distinctly not a conceptual definition. By approaching music (a)¹⁰³, one nears the truth of unfolding process. Unfolding process is nearer to us than those things which we consider near in terms of nouns and our spatial awareness (like our nose, or our hands); it is our nearest, as Jean Klein puts it (Klein). Small's definition of music is a succinct descriptor of the realities of

¹⁰² Noun.

¹⁰³ Activity.

unfolding process, rather than a reduction of the activity of music, and thus, is a more accurate approach to definition. Music is an activity, not a thing (Small 2)... thus any [traditionally conceived] definition of music is “...an abstraction of the action...” (ibid.)

Music is an activity that occurs; psychology superimposes it with the interpretation of “people doing” to feel safe within a perpetuated, self-constructed existential universe, a veritable saferoom. 'What is the meaning of music' has too often become a self-valorized inquiry into 'what is music in the Western frame' in musicology – with no conscious awareness of the presence of this frame shaping the entire inquiry (a fact that ethnomusicologists have labored to unveil, as they recognize it is one of the greatest impediments to rigor in their discipline, as well as a perpetuator of colonialist vestiges.) So it is vital that we penetrate the veneer of the superficial appearance and get at the actual activity in operation, the underlying generative activity, if we are to approach any depth in this text. We must, as it were, become completely honest: one could say that in the modern era self-disclosure is the number one impediment to human progress, whether we are talking about individuals, or cultures. In musicking it is no different; we have more information than we've ever had before, and this information requires a concomitant level of integration which we've never confronted before, and are struggling to discover. At the same time, we have stigmatized many of the avenues of this integration in our processual pubescence. Thus as musicians we have the opportunity to embody a level of

integration which is a counterpoise to this as part of what our musicking communicates.

A quote from Schrodinger is useful here, especially as the ‘modern scientific world picture’ referred to embodies a teleological pattern transferred over into the musical oeuvre:

“The reason why our sentient, percipient and thinking ego is met nowhere in our scientific world picture can easily be indicated in seven words: because it is itself that world picture. It is identical with the whole and therefore cannot be contained in it as a part of it...” (Schrodinger 128)

Throughout this text, inquiries into attention will be included alongside intellectual inquiry, comprising a complete whole that, in a process similar to triangulation (which we will dub **biangulation**), reveals the nature and activity of the subject at hand precisely through implication¹⁰⁴. In so doing it reveals assumed constraints previously ‘hidden’, opening vital new territory that enacts knowledge from both the explicate and the implicate modus’, rather than merely from the reified frame of the explicate (as has become normative in the West; this is part and parcel of the blind spots alluded to above. We must abolish these blind spots if we are to listen to or speak about music coherently. How do we abolish them? What facilitates this?). In short, we will be using intellection and empiricism, looking at phenomenon from

¹⁰⁴ In this case, we will be ‘locating’ consciousness, her activity, and its unfoldment through sound, musicking, and attentional inquiry.

the inside out and the outside in, like a stereo pair that create a perfect sonic image together; without either, the image is incomplete. This is the biangulation I refer to.

We must observe the activity of consciousness, as well as music, from the inside out, as well as the outside in: meeting at the space in between, we confront the praxis of direct experience, the ‘real’ as Xenakis called it (Pape), ‘sounds as they are’ (Cage *Silence*), the continuum of sound (Oliveros *Deep* xxiii and 12), etc.; unpacking the emergent direction in music I speak to here, as well as the way forward for our tradition.

Pedagogical listening¹⁰⁵ as an activity exercises various forms of attention towards the expansion, refinement, and awakening of the true possibilities of the instrument, the only instrument that creates all musicking.

Consciousness is the animator of imagination, enactment, as well as action, attention, etc. It weaves itself through all of the explicate processes of life; they are both of it as well as being completely powerless to contain her in her wholeness. Consciousness can be seen as the last enfolded order, within which all others unfold, which our conscious purview can only apprehend through implication; which no frames can **contain**. I ask the reader to keep this assertion gently in mind as the unfolding processes of this paper illustrate the multi-faceted dimensions implied, a

¹⁰⁵ Pedagogical listening is the inculcation of sonic attentional inquiries, of which Deep Listening has been the vanguard broadly, specifically into music education towards the cultivation of a broader range of musical competences, as well as the heightening of those already exercised/enacted.

perspective paradoxically not a perspective at all: but rather the revelation of the landscape prior to perspectives. The landscape in which musicking and all processes of life unfold. I may seem to be talking in circles at times; the cyclicities of process themselves must be seen to be the illustration, and hyperbole the revelation and disclosure of the ragged edges which normative languaging is impoverished to reveal; the activity which is beyond our current frame, as well as animating it: the ‘hidden’ generative activity.

The reading and enacting of this paper itself will be an exercise in various forms of attention, both explicit and implicit; we will circumambulate and triangulate, so to speak, the subject which is not a ‘subject’, which is implicitly not the objectified freezing of the activity of life we’ve too often become convinced that it is. The resultant of this methodology will be a comprehensive and rigorous understanding beyond the abstracted *a priori* assumptions of traditional discourse and dialectical modus’, and their inherent limitations. **Implicate intelligence** will be illustrated in the process; our modus operandi will be to show, not to tell.

The goal is to arrive at an understanding of music that does not devolve into the same explicate cul-de-sacs we’ve circled in historically: thus it is imperative, and I implore the reader, to engage in both laboratories, both that of the implicate, as well as of the explicate¹⁰⁶; the embodied attentional, as well as the intellectual, so that

¹⁰⁶ Precisely what I mean by these, and why I allow their explication to unfold over time will be outlined shortly.

rigor in this inquiry may emerge fully. The goal is not to devalue the explicate modus, but rather to disengage from our habitual **over-engagement** with it long enough to contextualize and reveal a larger understanding of intelligence, musicking, and life that has hitherto been concealed, and which in turn contextualizes said explicate modus, deepening the scope of **its** inquiry simultaneously.

Disparate authors and actors in the musical field have agreed that music's actual impact must be understood on the vibratory level, and further that psychological processes may be a profound impediment to really addressing this subject¹⁰⁷, as they tend to make us submissive to their own recursions, or "passing fashions" (Xenakis, Brown, and Rahn 23). In so doing they limit the 'scope' of the instrument, its purview. In Stockhausen's words (translated from Coenen):

"When a human experiences something acoustical, he will be changed, because he is modulated by the vibrations, all his atoms are modulated." (Coenen)

How is a human being changed? This 'how' has been something of a hyperbole in terms of 'how' to address it; the vibratory processes clearly underlying everything are both directly apparent, as well as seemingly far away, as they are mediated through layer upon layer of psychological process. **Experience** has at times seemed difficult to contextualize in terms of its value as **data**; this is both a conundrum of our time, as well as being a historical one. The shadow of the

¹⁰⁷ Cage, for example, spoke repeatedly to his desire to rid music of the psychological; In 'Silence', we find excellent discussions that speak to this on p. 48, p.59, p.68, as well as p.83.

subjective seemingly looms ever large (even as this ‘looming’ appears itself in the ‘subjective’ field of experience), leaving us scratching our proverbial heads and wondering: can experiential inquiries ever be approached ‘scientifically’? Can their **data** ever be understood deeply in a fashion that can be fully trusted?

Let me pose a counter-question: is the ‘objective’ objective of science possible¹⁰⁸? Is science ever contextualized outside of the scope of experience? It is mysterious that it has been so problematic to confront the territory of vibratory processes actual impact in a tradition that is fundamentally an embodied art: the answer is in the question. I will be implicitly challenging the notion that a somatic, integrative, and experiential approach is ‘soft’ or ‘unscientific’, seeking to expand our notion of the ‘experiential’ simultaneously (After all, it is the only way to ‘use’ our instrument). To do this, we must discard all of our notions of what ‘experiential’ means; I believe that the inclusion of a more rigorous understanding in regards to this is the only way forward. All that is needed is proper contextualization; the veil must be lifted from this process to begin doing this.

Further, there is an implicit understanding that what is called creativity is merely taking the cork off the bottle, so to speak, in terms of the ‘apparently’ closed systems of intelligence and consciousness. Creativity, like intuition, intrinsically

¹⁰⁸ Dewey and James certainly argued against the reification of the subjective/objective dichotomy (Reybrouck).

represents a confrontation of the unknown. It is an embodiment of “...open-ing one’s mind in order to receive more vibrations from the universe than one normally does” (Coenen¹⁰⁹), consistent with Pribram’s synthetic (and holographic) view of brain function (Pribram, Nuwer, and Baron)¹¹⁰. Thus intelligence is integral to our conversation here; music has a lot to teach us about intelligence, as both a mirror and resultant of the activity of vibratory coherence, rather than psychological processes (even if psychological process is involved) in and of themselves. Music may offer a more apt avenue for **framing** intelligence than traditional approaches have provided (as what has been inquired into has been framing the question), by framing it and observing it in the context of **activity**.

Intelligence may simply be, like music, a resultant of the unfolding activity of enfolded orders of organization in the quantum field, revealing themselves in ever deepening dimensions. Deep Listening is an embodiment of intelligence that the larger culture is ill resourced to apprehend at this historical moment due to endemic and habitual atomizations of mind enacted.

Piaget, for example, relates his perspective on intelligence as forming in developmental stages during childhood, under the primary assumption that it is a

¹⁰⁹Again translating Stockhausen.

¹¹⁰ Which has become more and more rigorously corroborated by neurobiological findings since his passing.

product of the ability to generalize (Piaget *The Psychology* 99), even after speaking about it as “...the state of equilibrium towards which tend all the successive adaptations of a sensori-motor and cognitive nature, as well as all assimilatory and accommodatory interactions between the organism and the environment...” (Piaget, *The Psychology* 12) earlier on in the same book. These are two seemingly incommensurable views from an embodied perspective, which (as we will explore in this paper/process) unveils the generalization and objectification habits (themselves predicated upon the reiteration of inherently exclusionary vibratory patternings) as frequent impediment to the unfoldment of coherence, to the natural imperative towards self-organization and self-equilibration in the system¹¹¹.

In fact, in examining multiple authors who speak to this issue of intelligence, this is a recurring theme: there is commonly a recognition that synchrony and coherence, the natural capacity for a system to self-equilibrate, points towards the activity of intelligence. At the same time, it is habitually **located** and **sourced** in the psychological faculties of generalization, abstraction, reification, objectification, reduction, etc. which are primarily associated with the intellect, and are explicate expressions of the field which the activity at hand is sourced in. May I be so bold as to point out that these psychologically abstracted faculties are also the very ones

¹¹¹ In this case the system can be seen as the body, the environment, the vibratory patterns of music, or any other complex dynamical system involved and interactive with the process, as well as the totality of all of these, as well as their unique idiosyncratic interactive relationships between each other.

being used to inquire (as the authors are negotiating intellectual tropes), and that this may (as Schrodinger's quote above points to) be the 'hidden' reason why the inquiry 'goes so far', and no further? And that Schrodinger's analysis, as well as what we will call the implicate principle herein, will corroborate this? And that this further point to the resolution of Leibnitz's doctrine of monads, as well as many other unnecessary historical conundrums, where the answer is literally in the question?

There is a fundamental misunderstanding of process in regards to consciousness: that when inquiring into anything in regards to consciousness, one must remember that **what is looking out, is what we are looking for**. This we have called the **implicate principle**, and it will continue to be discussed throughout. It points towards, as well as unveils the 'how' alluded to above, as well as a deeper understanding of embodied process, listening, and consciousness. To the degree that the implicate principle is understood and contextualized, the purview of the observer and the 'experiential' become infinite resources of valuable 'data'. The situation is akin to that in the sciences: our implicate instrument is just as 'artificial' as those of science, in the sense that there is a gap between what is being observed through them, and the resultant interpretation by an 'actor'. Unless this gap is studied and the data transmitted contextualized (Eddington) coherently by a rigorous understanding of the

instrument and ‘our’¹¹² relationship to it, they become the source of extraordinary confusion.

This does not mean that we throw the instrument out; it merely means that the way forward is to amplify our competence in regards to it rigorously enough to contextualize its ‘data’; so that we may garner the **implicit** understanding therein. We must, simply, reorient our entire modus operandi: this points to a cognitive inversion which I believe is a historical imperative at this moment, and which Deep Listening and other elements of the avante garde mirror as emergent phenomenon.

As musicians, we must never shy away from the challenge to master an instrument, much less the only one implicitly given to us (as opposed to being explicitly fashioned by the valorized hand of man). The unknown is clearly implicit in the implicate instrument; this in turn unveils the nature of the cognitive inversion alluded to above, and frames the fundamental challenges of our inquiry.

This confusion about intelligence leaks into our understanding of creative process, as well; is it the product of an abstractive intellectual capacitance? A psychological actor? An activity of the field? A chaotic resultant of the system? A mystical phenomenon? We must construct a frame that addresses all of these in this paper: consciousness, musicking, creative and natural process, as well as intelligence, all in one gesture. This paper must itself be an embodiment of **implicate intelligence**

¹¹² Inherent is the inquiry into 1) the nature of the instrument and its limitations as well as 2) the nature of the actor, the observer, the ‘self’, and their limitations.

in analytical activity, a counterpoise to the explicate activity of intelligence so overvalued in the current dominant paradigm, and thus must be understood through that lens. The processes mentioned above are not separate from each other, and neither is implicate intelligence **from them** when understood coherently; in other words, the diversity and the unity are not separate when understood to be inter-nested orders, rather than contradistinctive dichotomies. Quite simply, the revelations we seek cannot be arrived at through exclusionary activity of any form, and thus we must expand our modus operandi to reflect this.

All musicking occurs in the continuum/flux of space-time; where else would it occur? This is analogous to Stockhausen's encouragement that we discover its actual vibratory impact; they stare at each other across the implicate/explicate 'divide'. Oliveros' has further pointed out the limitations of the study of listening from the perspective of physics/psychology (Oliveros *Deep* xxiii) respectively, which embodies this seeming dualism: in my own experience with deep listening and embodied inquiry, as well as in teaching Sound, Listening, and Consciousness at UCSC¹¹³, as well as in teaching various workshops around the country, this has been corroborated thoroughly: that we are in a sort of psychological entanglement that

¹¹³ This was a course I developed and taught at UCSC that integrated transformative pedagogical methods influenced heavily by Deep Listening; the implicate methodology presented herein is its most recent iteration.

abstracts us from, and removes us from, this flux. They further reveal the implicit liberation from this entanglement which said flux/continuum unveils and facilitates through process¹¹⁴. Small has said “...it is easy to think of the abstraction as more real than the reality it represents...” “...this is the trap of reification...” (Small 2).

My experience has further corroborated that we must reorient our embodied process (already underway, whether we attend to it consciously or not) and return to the continuum of sound, rigorously increasing our competence in regards to it, and personally disentangle ourselves from the recursions of psychological process: the self-same attractor within the dynamical system, which also expresses itself across multiple systems. It seems to be ‘inside’ of us, yet when examined, it is not such a one-dimensional affair. Once again, my perspective is that this is the examination we have been engaged in all along; it seems strange that so much stigma has been ascribed to this notion of inculcating embodied process and inquiry more consciously in musicking, at least in some circl(es)(ings) [recursions] of musicking. At the point where physics and psychology meet, and dissolve, the inquiry into consciousness begins; new and infinitely creative dimensions appear spontaneously, unfolding to guide us forward and illuminate all that came before, as well as all before us. In the biangulation of empiricism and intellection, we apperceive what is implicit.

¹¹⁴ And which traditional discourse has failed to penetrate, as it is circling in cul-de-sacs of its own machination, and placing an artificial stigma on the ‘data’ right in front of it, inside of it, and emerging through it.

In regards to Deep Listening, Oliveros has said:

“Deep Listening for me is learning to expand the perception of sounds to include the whole space/time continuum of sound...” (Oliveros *Deep*_xxiii)

This is the cognitive inversion. Barring the direct confrontation of the praxis of direct experience/our mediations of it, the tradition is relegated to reiteration, recursion, and cultural stagnation: to becoming an instrument of its own self-same attractor¹¹⁵, rather than the extant (and infinite) possibilities within the field. Priceless gems that would otherwise emerge will be drowned out by the incessant noise of our lowest common denominator modern culture; which pollutes not only the acoustic ecology (Schafer), but also the ecology of consciousness in all of her forms (as well as in her lack of form). The tradition in its potential of highest coherency will be lost beneath this. We must awaken the anaesthetized, sleeping listeners that we have ourselves put to sleep; that have hitherto been rendered passive by the self-valorizing chatter of modern culture. The only way to do this is to first awaken ourselves, for we are this sleeping listener in bas relief.

The abstracted position of locating consciousness inside of psychological processes, rather than the activity of the field, or continuum/flux, prevents a statement such as Oliveros' above (in regards to the continuum of sound) from being fully

¹¹⁵ Which we are habitually permitted to deny. This notion of the self-same attractor will be allowed to unfold implicitly, and will also be unpacked in the context of complex systems and mathematics in a later chapter.

appreciated in its weight; sadly, her work has too often been dismissed as esoterica, when in fact it is more scientific, rigorous, and to the point than most modern musical scholarship. It contextualizes the data of the instrument through embodied process explicitly, implicitly unveiling the possibilities, rather than blindly and unconsciously being operated by the psychological momentum of the explicate modus and its historical over-emphasis.

Does Oliveros' and other musicians' work merely embody feminine endings (the embrace of the unknown, expanded awareness, and the body, etc.) more than the extant hidden Trojan horses of patriarchy are willing to allow for? Does the latter's latent irritation emerge, like an unconscious tic, at the mere mention of said processes? Are the bodies that would deny this afraid of what they might find within if they gave themselves fully to the embodied process, and the inquiries implicit therein?

Our academic processes have conformed themselves too much to dominant constraints culled from other disciplines, despite emergent streams in those disciplines which reflect those alluded to in musicking (corroborating not only their efficacy, but their vital importance, as well). In constructing this paper, I have considered content, process, and inquiry to be inseparable. My approach is akin to that shared by Cage towards the beginning of Silence:

“My intention has been, often, to say what I had to say in a way that would exemplify it; that would, conceivably, permit the listener to experience what I had to say rather than just hear about it.” (Cage *Silence* ix)

This is an embodied approach. What I will be presenting herein is not a theory that champions the new in lieu of the old, that self-valorizes itself into distinction, leaving all others trailing in its dust, which seems to be a normative historical modus operandi; it is rather a simple theory, with a simple intention to become completely honest. Honest about what is already happening in musicking, as well as with the creative process, consciousness, and vibratory process. In so doing it unveils an observational lens through which all art and music may be united and understood, without limiting or excluding any of its activities in the process.

It is Occam's razor in the realm of the implicate. All culture, all music, all consciousness, is inseparable from the processes of nature and life; Coomaraswamy did not go far enough in his suggestion: art is nature in her manner of operation. Reconciling ourselves to this in turn returns us to ourselves, and the byproduct of this is a whole new oeuvre in musicking.

Musicking is thus one activity, not constrained to the psychological processes ingrained by culture, within which all traditions may be cultivated to flourish and thrive as living ferments unbound by assumed constraints, and within which the analysis of art and music may be contextualized and deepened as an unfolding order of this larger activity: of its enfolded coherence potentials, and their subsequent realization. In some sense one could say that there is a primordial tradition, not manufactured by the artifice or psychological processes of man, which cultural imperatives have forced us to rediscover as dissipative elements in the system literally beg for new coherence potentials to be realized; it is a 'tradition' inseparable from the

entire activity of life processes, an *a posteriori* activity. The discovery therein in and of itself reorients our musicking towards a regenerative future, not just in the avante garde, but across the board (including cross-culturally, as well as ethnomusicologically).

In music, too often the tradition has become an instrument of its own self-same recursions (or attractor): a self-valorizing reiteration of a set of “right” perspectives and ways of engagement assumed within that dynamical system; frequently in defense of a canon, but not exclusively. The resultant of this activity is that it prevents said canonical tradition from being interpreted and realized in ways that are fundamentally regenerative, that will sustain the tradition and promote a living musical environment, rather than the mere aggregation of cultural artifacts (while the tradition dies).

This is a truly grievous state of affairs; post-colonial remnants of implicit cultural genocide by the ethnomusicological tradition corroborate the very real danger that this phenomenon has bled over into our oeuvre, into our tradition, and is a product of a more fundamental generative activity that will continue until confronted directly (just as the original more overt form did in ethnography). To simply become honest is enough: to become deeply honest about the enactment of musicking, both inwardly and outwardly, with an awareness of the particulars of the observer. Like the sciences, understanding the observer and its influence on the activity engaged reorients the entire inquiry. Once we understand this we can realize a living environment of musicking, one which cultivates all of the ends of music as

historically realized, as well as emergent new directions that respond to modern imperatives, further unveiling ends up until now unimagined. New complexity requires new means; in the dissipative structure of modern musicking, a higher order of coherence is poised to unfold. The only question is: how will we become instruments of this transformative direction?

In musicking we have the traditional idea of a canon (n): an intentional reification of cultural myths surrounding a certain sub-set of musicking. The canon represents a proud emblem of a unified sub-tradition¹¹⁶. What has been ignored is the fact that canon (n) is fundamentally a self-valorizing activity – it gives value to the snapshots of musicking its catalogue indices. It is an intentional reifying agent, and thus a perpetuator of the self-same attractor.

I propose that we drop the activity of canonization completely¹¹⁷ as a conscious recognition of the implications of such, and as a gesture towards a truly integrated tradition. If we understand the implications of a history of canonization, colonialism, and all exclusionary activities then we must make reparations by

¹¹⁶Wherein the larger notion of tradition mentioned earlier takes into account the entire activity; the pluralistic collision and beyond, within which this occurs.

¹¹⁷Please note that I do not propose that we drop the canon, but rather the *activity* which self-valorizes it.

deliberately de-canonizing, dropping the canonical veils from our soundscape¹¹⁸. One wonders how lovely Bach will sound without this extraneous veil, one which he never personally intended to place upon sounds the as they are emerging from his compositional systems.

Decanonization (a) is something that should be done institutionally when the maturity ripens, but we don't have to wait for this to happen personally. It is essentially an internal movement, an attitude, and may be experienced at anytime, by anyone – it is simply the conscious dropping of all ideas about music. At least that is the generative activity that gets to the core of it. Ideas about music go way beyond canonization, but the teleomorphic essence is the same. Dropping ideas about music is the movement of returning sound to sounds as they are: a cognitive revolution that inverts the whole activity of colonialism, canonization, the self-same attractor, the teleomorphic impulse – an apparently stupid dialectical inquiry unless you really grasp Husserl's *epoché*₂ unless you really grasp the fundamental nature of hearing and listening - and then it becomes essential.

¹¹⁸ It may be noted with irony that canon as musical catalogue and as object of war refer to instruments of violence in both cases: activities of excluding one group to the detriment of another.

Splitting the Atom

Before Columbus sailed the ocean blue (or at least, so the story goes), America did not exist, and the world was flat. When the atom was discovered, man had discovered the fundamental building block of life - until quarks were discovered. In each case, a reduction occurred for the functional maintenance of the myth of human intelligence wherein humans believed that they had apprehended the generative activity at the core of life processes in the form of an intellectual atom¹¹⁹: the belief that the world was flat, and the belief that atoms were the final level of physical expression (due simply to the fact that it was the smallest which man could observe at the time, which illustrates the degree to which we are willing to make out of our perceptual field an absolute, which it clearly is not upon examination) are just two examples. Each were unexamined *a priori* assumptions, which then became the built perceptual universe inhabited by the culture at large over time.

The dialectical terminology 'atomization' is useful as it contains an intrinsic reminder of this historical *faux pa*; it may inhibit our reiteration of this generative unfoldment if we study it rigorously, and if this study then animates a reorientation of the generative activity of the organism. This must necessarily involve embodied

¹¹⁹ Hence it has been intrinsic to Western intellectual history: that an understanding which unveils the generative activity underlying holds the very key to understanding the activity of the entire system. I do not argue with this, I merely argue with the means, and propose new ones in this text.

process, if the runnels and chreodes in the dynamical system are to be reoriented thoroughly. For atomization and reductionism are generative activities themselves; reductionism in the realm of the intellectual is reflected in the more subtle processes of consciousness which underlie it, and atomization denotes these, as well as more exteriorally observable phenomenon associated with it, such as those alluded to above. A tonal frame provides a useful musical example of atomization: it is an atomization of the frequency spectra¹²⁰, which is in fact a continuum of unfoldment, which became an inhabited frame, a built perceptual universe, in terms of the tradition and the actors within it historically.

Beneath the surface in life processes we are constantly sorting out divergences and similitudes and making sense of them neurobiologically - in terms of how we cognize the world, as well is in how we think as an isomorph to this. Atomization is a functional adaptation to navigating complexity; the resultant fragmentation of the field of consciousness which occurs when the reification becomes preferenced over the continuum of unfoldment to the degree of exaggerated distortion (which alters the aperture of perception so that one inhabits entirely the internal recursions of said process) is concomitant to a self-fulfilling prophecy: it is thus self-valorizing, and literally a cul-de-sac which one may wander down and never return from.

¹²⁰ Implicit in this is a complex of inter-nested associations around interval, chord, tonic, dominant, etc. which are themselves implicit in the atomization of the frequency spectra.

In music, we can see the isomorphs of reductionist thinking shining through this activity of atomization, in the core generative activities which are the enfolded orders of complexity our activity exogenates: not in *Fux* per se, but in any ascribed notion wherein *Fux* represents an absolute in musical process. Not in the Beatles per se (as a raw vibratory unfoldment) but rather in any ascription that they represent an absolute in musical process. Thus this ‘absolute’ in process is inhabited, and infinite other processual avenues filtered out as a result, unless this is confronted.

And what precisely is an absolute in musical process? Anything whose meaning has been fragmented from its contextualization as a phenomenon within the continuum/flux – which is ascribed value divorced from the domain of unfoldment in which it actually occurs. The fragmentation of process and the fragmentation of thought are thus integrally linked, and revelatory to the future of musical process, as their isomorphic unfoldment follows along the lines of morphoteleosis and the implicate as outlined in this text. The future of music is to bring this to consciousness, both intellectually, as well as through the exogenation of musical process (through composition and performance), so that we break the cycle of blind recursion that keeps the system as a larger activity circling in these fragmented cul-de-sacs of activity. The future of music lies in continuing to build a bridge between the explicate and the implicate, more and more competently, until we have brought ourselves and our audience across it completely towards the integration of both.

In Western culture, the tragic comedy of atomization has a rich history. Much of our modern gadgetry is the product of our capacity to divide and categorize (and

then assemble into apparently closed systems) apparently isolated parts. There is a reified veneer interposed upon this process: that the coherent object resultant is itself an absolute, a sort of autonomous island: 'it works', and the teleomorphis of this theoretically closed system represents an affirmation of 'progress', the atomizing activity, it's value, and the rugged individual which exogenated it; this processual exogenation is at the core of our entire attitude towards technology, modernity, as well as art, and can be metaphorically linked to the notion of the 'musical object'.

However, a more sophisticated inquiry unveils even the most breathtaking technological achievements - a high speed jet, or a massive public dam project, as two examples - as being contingent not upon the machination of a system which is a dynamical absolute (isomorphic to John Wayne in the Wild West, a sort of machismo-as-dynamical absolute) or closed system, or atomization of the activity around it, but which rather relies upon complex compensatory mechanisms (similar to the filters of the body) in relation to the environment in which it is embedded to allow it to navigate, as discussed earlier on in this text. Thus, the atomization of systems is one-to-one with the divorce from the body and the continuum/flux we have enacted historically.

Our artifacted systems can also in some ways be considered new life forms; more like us than we may wish to admit, and prodding us on in our obsession with distinguishing our sentience from them¹²¹. In our 'quest' for artificial intelligence, for

¹²¹ This may be seen as drawing upon, as well as being a point of departure from, Reybroucke's analysis (Reybroucke).

example, we have comically veiled our own hidden *a priori* assumptions of a manifest destiny in consciousness, wherein the human being embodies a special form of intelligence which is completely different in generative operation than anything else found in nature. We may be unique, but we still share the same generative roots as all of life; this text will illustrate this.

Paradoxically, our technological exploits in fact drive home how artificial most of our intelligence is: their explicated processes reflect the artificiality of the hidden *a priori* assumptions and processes which in turn frame our perspectives of the universe, and not the artifactual manifest destiny of an ontological absolute which we believed in so hopefully. They challenge us more than ever before to unearth these *a priori* assumptions in order to match the unfolding complexity we find ourselves germinating in creative unfoldment at the level of humanity and its generative processes in the 21st century.

In the center of all of this activity is an activity of morphoteleosis which seeks to recurse itself at the level of generative process (where ‘itself’ is a generative activity, which may or may not be reified as a noun in the traditional notion of identity, but which is fundamentally an atomization). It highlights the entire creative process: the ‘gap’ between intention, and realization, which only a sophisticated understanding of consciousness which has observed this in unfoldment, and located its activity in praxis to it, can illuminate. The Cartesian “I think, therefore I am”, from a dynamical systems perspective, is rooted in the same morphoteleosis which constructs the reified technological object, as well as the reified ontological object, as

well as the reified psychological object, and is just as artificial in each case. It is self-valorizing, not self-evident; it relies upon its own artifice as the source of its own value, and that value in recursion as the source of its future survival. In contradistinction to the continuum/flux which it attempts to stave off, even as it subsists, and exists, upon it.

The resultant is the reiteration of a form of complexity which is at odds with natural process, while simultaneously veiling its own generative unfoldment from the conscious observer (which is, even more confusingly, a resultant of it), who is so ‘in it’ that, like a visual observer wearing colored glasses, they’ve forgotten what the world looks like without them, as those vibrations outside of that spectral fragment it filters out (in what it ‘chooses’ to allow through in its preference-oriented paradigm) for all intents and purposes do not exist.

And the same occurs in music. There is a historical inquiry into ‘sound as it is’ - not just reflected explicitly in the Acousmatics, in Pierre Schaefer, in Nada Yoga, in John Cage - but also implicitly in all of music, one which intrinsically recognizes and exposes this quagmire which lies at the center of human existence. All musicking can be said to be an exploration of the ‘gap’ (or lack thereof) between unfoldment, and attention as it is placed on unfoldment. And thus, the generative and gestural germs explored in the attentional exercises exist in this territory. A pedagogy of listening cultivates competencies in the core gestural primitives of the activity of coherencing which all musicking is an exogenation of, and disentangles the listener from atomization as a generative activity.

In some ways, this unfoldment is a process which we will never observe lucidly - as the more one inquires into it, the more apparent it becomes how omnipresent the ways which our psychological process has interposed upon it are. However, this is only if 'lucid unfoldment' is taken to mean apprehension in the normative sense. The engagement with the continuum/flux which Pauline Oliveros has advocated is also the reaffirmation of a form of lucidity which atomized tendencies in culture and thought have historically repressed, just as they have the feminine, nature, and the body.

Throughout, when I refer to psychological processes, I am using a dynamical definition idiosyncratic to the analysis herein - as abstracted processes in consciousness which are interposed upon natural process. They are, like the filters of sonic cognition, functional adaptations. They do not need to be eliminated; we must merely reorient our activity in relation to them in a more coherent fashion, so that what we exogenate is in turn more sustainably and regeneratively coherent.

We may observe the natural unfoldment of life, as well as the abstracted layers interposed upon it by the generative activities of psychology, and in doing so, understand this profound territory of 'sound as it is' and the unfoldment of musicking. To do this, we must understand that we are looking out from within a system, and that the same generative activities animate 'us' in one unbroken whole with what we observe. This is once again the implicate principle. In the 21st century, questioning these processes should be no more taboo than questioning the *a priori* status of

historical musical processes (as in to declare martial law over declining patronage of *Fux* [as a musical absolute]).

Traditional definitions of the self, of psychology, etc. generally assume that 1) the self may be described as an atomized identity, and 2) it is appropriate to consider it ‘real’, similar to the thingness ascribed to objects¹²², or at least it is assumed so for functional adaptation. In contrast, Lacanian theory (which influenced Xenakis heavily) offers an analysis wherein the ‘real’ is an authentic expression independent of sense perception and the built perceptual universe. This is not abstract – it is actually rather concrete. I advocate for an interpretation of ‘the real’, informed by our dynamical systems analysis, wherein it is contiguous with sound as it is¹²³; wherein these two represent the purview from within (‘the real’) and without (‘sound as it is’) the dynamical unfoldment observed, thus aligning Lacanian theory, Xenakis’ theories, Cage, Husserl, Schafer, and other actors who have engaged this terrain, and further corroborating the analysis of a stream of emergent phenomenon cross-modally.

In some way, you could say that the Lacanian side of this coin is the ‘asti, asti’ of Advaita Vedanta, and the Husserlian is the ‘neti, neti’.

¹²² And one may contemplate how ridiculous this is, that in the post-Heidegger era we may question thingness in an object but not in the self, which noone has ever been able to point at, pin down, or put in a petri dish.

¹²³ As well as with the implicate geometries.

At the same time, the inquiry into consciousness has humbled us in the modern age, revealing just how many hidden *a priori* assumptions we have been harboring beneath the surface. It may be that this is why so few are ardent enough to inquire into it in more than a cursory fashion, as the sincerity alluded to in the Preface may be said to be predicated upon a willingness to have every single one of one's most sacred assumptions shattered. And that is not a very popular activity in most circles.

However, the historical personage alone should entice people to enter this domain of implicit attentional inquiry more boldly, as well as advocate for its validity: from Pierre Schaefer to the Acousmatics to John Cage to Pauline Oliveros to Husserl, as mentioned above, all have sought to understand the phenomenological unfoldment underlying their work, whether explicitly or implicitly, not just the rote cognitive mechanics of it. In music, the musical object is implicitly the answer to the question 'what happens when we do this, this, and this' wherein the denoted actions are the score, the instructions, etc. the enfolded explication¹²⁴. And then we observe what unfolds. Similarly, attention may be instructed in various fashions, and the resultant unfoldment observed, and this comprises a laboratory of attention contiguous with the history of music.

¹²⁴ Ostensibly the folded-up, cut piece of paper Bohm used as an example of enfoldment.

The Fuxian ‘this is how you do it’ is perhaps the ultimate form of explication in musicking. Thus knowing how and explication become interlinked; however, a sensitive process will facilitate the exogenation of the implicate even in the most explicated domains. In addition, it must be equally apparent that no explication of new terrain can ever occur if the body of algorithms which denote ‘knowing how’ are taken to be an absolute. The relation between this and Kuhn’s analysis of historical process in science at the level of embodied process should be immediately apparent.

In order to contextualize the conversation so far more comprehensively within our own tradition, we must first expose our own hidden *a priori* assumptions, those which have veiled the state transition shifts which various historical transformations have emerged from in the dynamical system called ‘the Western musical tradition’ over the temporal span of the recent past. Intrinsic to this is the phenomenon of atomization, the persistence of habits in culture, the ways in which these pre-frame the creative unfoldment that occurs, and the teleological pursuit of a mythical absolute in the domain of complexity at the level of explicate process (which is in turn isomorphic to the pursuit of the same in the domains of consciousness and ‘human intelligence’, as outlined earlier on in this text).

Before Stravinsky and Schoenberg came along, tonality was sacrosanct: a built perceptual universe thoroughly inhabited, and rarely questioned. The ‘intrepid composer’ who wished to ‘break from the past’ was driven by an intuition of the insipid hidden mimesis of atomization and the self-same attractor behind cultural processes, and a concomitant intuition of an intrinsic freedom which the statistical

complicities of the atomized built perceptual universe had effectively veiled. In their desire to be liberated from the structures they ‘knew’, and which represented the past, they naturally ‘pushed against’ these, as they ‘knew’ no other way; they had no other model for how to confront these phenomena, so they proceeded to boldly ‘break with the past’ – by pursuing the artifice of more and more complexity in explicate process – just as their predecessors had. The machismo of complexity thus reigned supreme – in recursing complexity in the explicate modus.

The ‘intrepid composer’ attempted to ‘break from the past’ by using the same tools of the past - not knowing that invisible geometries which persisted in the domain of consciousness as the actual modes of production¹²⁵ of culture at subtler levels of process, as well as in musical elements (framed by these habits of the past, as well as by the particulars of instrument, ensemble, and one’s education) were being reinforced by their activities (wherein what is exogenated recurses in the dynamical system - including what is implicitly exogenated ‘unconsciously’ at these subtler levels of expression).

A whole host of new methods, styles, and techniques were explored in seeking resolution to these intuitions, which expanded the musical oeuvre considerably. We

¹²⁵ This clearly harkens back to the analysis of Marx, and is intimately inter-linked with it; however, it may be a shade too Hegelian for Marx’ particular preferences. In addition, Marx never went into the particulars of the underlying generative unfoldment of consciousness and phenomena, especially in praxis to neurobiology, complex dynamical systems, processual unfoldment, and the inquiry into consciousness in the idiosyncratic modus’ employed in this text.

began to see music spoken about in terms of atonality; defined intrinsically in contradistinction to tonality. Many believed we had shattered the old modes and forged a bold new direction in music - but this wasn't true. The built perceptual universe of musicking historically (which included tonality, equal temperament, metered rhythm, etc.) was so thoroughly inhabited that it was in fact difficult to tell whether one had actually left it or not. From within the particulars of this built perceptual universe, atonality did seem radical, and it did seem like we had left tonality behind.

In rejecting tonality (intrinsically an activity of 'pushing against'), atonality subliminally reinforced the same geometries at the subtle levels of consciousness¹²⁶ which atonality and tonality shared in terms of their generative substrate as dichotomous phenomena – as well as the shared morphoteleological compulsion

¹²⁶ A phenomenon we will see illustrated herein. Put simply, however, the geometries at the level of consciousness as a substrate (as the actual modes of production of the musicking) will recurse through different exterior frames without actually effecting a total processual transformation until this level of process has been confronted historically at the level of its generative roots. Until this has been done, only superficial change has been effected. In addition, elements of prior explicate frames are implicitly recursed unconsciously, as illustrated here with tonality, equal temperament, and metered rhythm being the primary examples. But other examples exist; for example, notational elements (such as tenuto, staccato, legato, etc.) will implicitly frame musical possibilities. A similar phenomenon is observed with software environments for working with audio, such as Max MSP, wherein the objects in the library implicitly frame the creative possibilities – if one were coding in machine language, one would naturally build their own synthesis from the ground up; users of software like Max MSP are often not aware of the degree to which the object library pre-frames their creative possibilities, and are thus similar to users of the 'notational environment'.

towards increased abstraction in the field of the explicate. This would not become apparent to the tradition until much later.

We had in fact not escaped the past at all: our generative possibilities were still being implicitly framed by it; in the case of atonality, both by elements at the subtle levels of consciousness, as well as in implicit elements of equal temperament, metered rhythm, and other musical features which persisted, as mentioned above; even if exterior appearances made it appear otherwise, the quest for musical freedom from implicit mimesis continued on.

We began to see music spoken about in terms of twelve-tone music, the second Viennese school, and polytonality – wherein composers explored new means which highlighted a broader field of complexity in the explicate modus, which to them spoke to the emergence of the more authentic creative expression they were seeking. Polyrhythmic music, synthetic modes, and microtonal music¹²⁷ represent a few examples of these new means. As with atonality, all of the above implicitly recurred the primitives of prior musicks in the system: equal temperament, metered rhythm, as well as tonality (at the level of musical process) in various degrees, as well as the geometries of consciousness, in bas relief – which included the

¹²⁷ Significantly, up to a point microtones were still defined primarily in relation to equal temperament, as fractions of it.

morphoteleological absolute in regards to complexity and explicate process mentioned earlier.

Pitch class set methodologies, percussive music, extended instrumental techniques – as the 20th century continued to unfold, more and more actors, via apparently ‘new’ means¹²⁸, took a stab at breaking out of the circle of implicit mimesis which they had intuited was integral to discovering a more authentic musical expression. Only to be boomeranged back into this mimesis by their hidden *a priori* processes. Until they understood the actual generative processes underpinning this mimesis, and their own creative activity from a deeper frame, this was bound to continue *ad infinitum*. Even antimusic recurred the underlying illusion that the ‘way out’ is through increased forms of artifactual complexity in the explicate modus (in its intrinsic ‘pushing against’). As we will continue to reiterate throughout in various conversations, in terms of the atomized, built perceptual universe, the way out is in fact the way in. This was the freedom from mimetic recursion which the ‘intrepid composer’ had intuited, and which these historical recursions were seeking to resolve.

With impressionism, as well as with the dense microtonal aggregations used in Ligeti’s music, we can observe two very different strategies which both embody a situation wherein defined lines gave way to the space between the lines - in Ligeti, the seemingly solid lines of our perception of frequency and tone were implicitly exposed in pieces such as Lux Aeterna, wherein the chaotic resultant of dense structures, and

¹²⁸ New at the level of explicated complexity, but not necessarily at the level of consciousness.

how they appear to us in perception, were part and parcel of the medium of the musicking. With Impressionism, the seemingly solid lines of the ‘musical object’ began to be broken down, through similar new means to those mentioned before: polyrhythm, new harmonies, new scales (as well as a reappropriation of the pentatonic scale), etc. In each case, we observe a gradual breakdown of the atomization underlying which would eventually turn the situation around completely once the actual stage of its enactment was confronted historically.

In terms of equal temperament, tonality, and metered rhythm, these elements of musicking were atomized – producing runnels and chreodes in the dynamical system which extended into neurobiology and biology at levels which needed to be exposed before they could be confronted. They represented ‘habits’ in the dynamical system, where unfoldment tends to return to over and over again, until it’s hidden *a priori* processes are ‘outed’, and a new generative activity cuts new runnels and chreodes¹²⁹. The pursuit of an artifactual complexity as an end in and of itself also represented a habit, and one which we had found hard to break (especially as it recursed in parallel process the machismo associated with it). The change of exterior

¹²⁹ We will discuss more in-depth how musicking creates chreodes and runnels in the human organism, as well as in culture, in the neurobiology and CDS chapters, at a very real and practical level. Using the same tools (equal temperament, meter, etc. as well as the subtle geometries at the level of consciousness which our later discussions will unveil), they sought to inhabit a completely different terrain. Certainly new methods applied to old tools is a useful pursuit; I highlight a deeper level of generative process which is salient to our inquiry herein.

means, and the further abstraction of explicate complexity, was not enough to bring us across the atomized divide. We had to split the atom – and discover a new form of complexity, and thus a new form of coherency absolute – before we could actually break from the past.

Intrinsically, the exposure of the illusion of human control, as well as the hyperbolic corners of our built perceptual universe which have kept it's apparent 'reality' unquestioned until recently in the West, reveal the generative activity underlying these seemingly solid 'defined lines'. If not explicitly, then implicitly. It was as if, as the increasing complexity of the modern world challenged the human organism in new ways, an implicit inquiry into the construction of experience and meaning emerged organically through the operation of music, as well as other disciplines: as if a larger self-organizing activity of the field was operating and being revealed through it. As physics made it more and more clear that every process in the universe is fundamentally indeterminate, so did a consequent emergence of musicking which sought to discard the vanity of control over phenomena arise. None of this was an accident: in dynamical systems, emergent phenomena tend to mirror each other in disparate expression across the system, self-equilibrating the overall activity of the system in their co-emergence. Musical object gave way to musical texture and an unfoldment wherein the perception of differences was highlighted, as we find exemplified in Minimalism; simultaneously, the composer began to compose processes which resulted in music, rather than music as a through-composed object.

With chance music, and aleatoric music, the embrace of indeterminacy became more explicit, rather than implicit (as it had been in all music before¹³⁰), and we began to see a new phenomenon, which had been predated by Dadaism, Husserl, and others: a phenomenon which I argue is the most important of the 20th century cross-modally: the exogenation of the implicate order through explicate processes. In music, this entailed the building of bridges to the implicate, from the built perceptual universe as an atomized landscape, via musicking as the medium. We can trace an arc, wherein the construction of these bridges increases in sophistication as the 20th century, and the intrinsic inquiry into complexity, unfolds.

Further, there was an implicate process¹³¹ behind each of these emergent activities which was invariably an exogenation of the implicate whole; there was an

¹³⁰ Historical examples of aleatoric music before this time (like the dice-throwing pieces of Musikalisches Würfelspiel) exist, but the emergence of a more dedicated compositional and philosophical inquiry into these phenomenon is unique to the 20th century.

¹³¹ Implicate process may be understood in contrast to explicate process, processes wherein the explications of a conscious actor define the apparently solid lines of the resultant. In contrast, implicate process is occurring all of the time, notwithstanding any explicated processes put in motion by a conscious observer (n) apparently independent of the implicate order. Bohm's notions of the explicate and implicate order precisely outlines this terrain, that of implicate and explicate process. In 20th century music, we began to see composers explicating processes designed to exogenate the implicate activity, and abandoning the illusion of control endemic to the entire mindset of Western culture before this; this represented an ontological revolution mirrored in other streams of Western thought. As mentioned before,

implicit inquiry into human experience, the *a priori* assumptions and processes we build it upon, and the mystery of consciousness as it inhabits it. Before it became realized as an explicit inquiry in the works of Cage, Oliveros, and others, it was reflected implicitly, even hyperbolically, in a gradual revelation which shone throughout the musicks discussed in this chapter – gradually revealing the construction of the built perceptual universe in *bas relief* as the 20th century unfolded¹³².

With each new ‘school’ or ‘style’, the tradition experienced a state transition shift in the outward dynamical system, to greater and lesser degrees, which we can track going back in musicking as far back as recorded history. Thus the historical recursions observed by Thomas Kuhn in science can be seen isomorphically mirrored in music, and the same ontological morphoteleosis observed in more explicate intellectual processes may also be observed in musicking at more subtle levels of

explicate process may be simplified into what is done, and implicate process as what actually occurs, from a phenomenological frame of analysis.

¹³² Even with Ligeti and Cage, the illusion of human control in terms of the implicit persistence of veiled *a priori* processes (with regards to equal temperament, for example) was still present to a certain degree, even in their most ambitious musical pursuits. This is not to say that this is intrinsically problematic in Ligeti or Cage’s music (and certainly they were both aware of this); rather it highlights the gradual emergence of the implicate through various 20th century musicks, especially in contrast with notions that each new school or style had diverged into completely new territory, when implicit holdovers from the past could be found in each. They all retain value as musical expressions; only their vanities need be shattered.

generative process - as illustrated by the persistence of tonality, not just as a means, but also as an implicit 'frame' of processual unfoldment¹³³. These also point to a level of state transition shift more fundamental than exterior historical processes – which exist in the continuum/flux – and which are exemplified by the emergence of the implicate activity itself.

Without attentional rigor, it is impossible to understand this dynamical analysis fully. The undisciplined attentive faculty is at the whim of atomized cultural predilections which blind it to the most obvious, the nearest in experience: the intrinsic, the implicate, the immanent. As it is our unique situation to look out from the abstractive interpolations which underlie our shared built perceptual universe (in other circles called culture), our engagement with them (and not merely blindly through them as an unquestioned frame) is critical to achieving a competent dialectical disentanglement which approaches anything resembling rigor: which reveals the activity underlying, and animating our 'apparent' experience, as well as these more superficial activities in relation to it¹³⁴.

¹³³ And not just an intellectual 'frame', but an inhabited frame, as in veiled *a priori* assumptions, which then become *a priori* processes, which then become the built perceptual universe inhabited. The same phenomenon observed with meter, equal temperament, form, etc. is also reflected in the subtle generative germs of consciousness, as outlined throughout this chapter.

¹³⁴ Another way of putting this is that, from the perspective of the conscious observer, the 'real' may be described as the portion of the dynamical system called 'psychology' which is not abstraction, but which is rather contiguous with vibratory

From our own experience of musical unfoldment, we know that programmatically front-loading an audience will frame what they experience, as discussed earlier. Where they might have had experience A without any front-loading, they have experience B predicated upon the implicit frame erected by said front-loading. From the moment the intricate dynamical processes implicit in any programmatic front-loading begin, the performance has already begun to be framed at the level of consciousness. Whatever unfolds in the domain of ‘what is’ will occur within that, and not the continuum/flux, to the degree to which the audience member inhabits this frame as an ‘experienced real’. This implicitly occurs at a more subtle level than concert programs, newspaper critiques, and other explicated processes, and the sophisticated artist is not fooled by the delusion that they end there, just as reductionism does not end at lexical teleology’s – these processes interpenetrate consciousness and the body, as well as vibratory processes.

In contrast, when the audience is invited to become immersed in a processual unfoldment which is not front-loaded in the normative fashion, their neurobiology is intrinsically potentiated into a domain of unfoldment of a completely different order, one which exogenates the implicate, and implicitly returns them to the continuum/flux, and which also represents a state transition shift in the dynamical

processes ‘as they are’; it overlaps with them, and is simultaneously dynamical in isomorphic fashion to them.

system at a different level than ‘schools’ and ‘styles’¹³⁵. It is the domain of the implicate in processual unfoldment, but more importantly, it is the domain of the implicate in processual unfoldment through the auspices of an exogenated, or explicated form, and represents a more radical transformation in musicking than any of these ‘schools’ or ‘styles’. It is not just the presentation of a ‘novel object’; it is the transformation of ‘novelty’ as a particular case into a general case from which unfolds new orders of organization. It is an infinite set of unfoldment possibilities of which even the composer is not privy to the particulars: only the generalized patterns, and a sort of intuition of the significance of their compositional alignment within these, of how this may unfold. One may say, its isomorphisms: which extend ‘internally’, and ‘externally’ at infinite levels of fractal process which may be observed empirically, as well as intellectually¹³⁶. This is the central point to understand processually, as well as aesthetically, in engaging this terrain, and delving deeper than the top-down assumptions which ostensibly act as a glass ceiling. It is the hidden reason why this state transition shift is infinitely more significant than ‘school’

¹³⁵ It should be apparent from this discussion that front-loading includes a whole host of activities un-exposed beyond merely program notes (which don’t necessarily front-load, if they are approached with a certain sophistication in regards to this domain) and that in fact the entire atomized perceptual universe is intrinsically front-loaded, and this is part and parcel of the relevance of methodologies which expose this, as they further reveal the nature of the human situation to said humans.

¹³⁶ Herein this will be illustrated by neurobiological process, dynamical systems unfoldment, the processes of consciousness, as well as those enacted within the bioresonant laboratory of direct experience, to be isomorphic to those in musicking.

or ‘style’ as a novel object: it reorients the entire notion of ‘musical object’ into a new domain of dynamical unfoldment that approaches a complexity singularity of a completely different order than that found in explicate processes.

Only when we recognize that this ‘front-loading’ is a more subtle unfoldment not only of the neurobiological processes in humans, but of an even broader display of inter-nested unfoldment’s, can we even begin to engage this level of generative process: a ‘level’ which, we will see, is in fact driving the entire generative unfoldment, the fiction of the conscious observer and its interpositions notwithstanding.

In this moment I speak to you through a filter of languaging, and a lexical frame which is itself implicitly entangled with this subtler level of consciousness unfoldment; hence the metaphorical emphasis I reiterate throughout, wherein the coherent generative gesture beneath these processes (the attentional inquiries plus the text taken as one whole) are what are most relevant, just as they were in Sound, Listening, and Consciousness. Barring the exposure of this level of process, we are doomed to blind historical recursion. The emergence of implicate process in music, and explicate processes which exogenate it, is the single most important phenomenon in the recent history of musicking. It is the resolution which the ‘intrepid composer’ intuited – the ending of human mimesis at all levels of process, and not just explicate levels. This resolution is immanent – and it is to be found in consciousness.

There is one composer who has arguably done more for bringing this about than any other composer in history. Both due to her presence on my dissertation

committee before her passing, as well as due to the nearness of her work to my own, Pauline Oliveros' life and work holds particular poignancy and relevance in this text. I recently looked up the Grove Dictionary of Musics' entry on her (Taylor).

While the entry does a passable job of outlining Oliveros' work within functional reductions which would be recognizable to intellectuals - comfortable lexical atoms such as 'meditative improvisation' and 'ritualistic' contextualize her work within a field of the ontologically 'known', and within the particular shared complicities which arise at this historical moment – it does not capture the essence of her work.

It fails completely to recognize that Pauline's work represents an evolution of the phenomena these two lexical atoms point towards, and further that her work exogenated a singularity in complexity unfoldment which was a complete revolution in musicking. The possibility of engaging consciousness and the body directly, towards the exponentiation of an infinite feedback laboratory of musicking, through listening, was a direction that had not been explored before – and a phenomenon difficult to find reflected cross-modally, which further highlights the significance of her work.

The Grove Dictionary entry does not even afford an outside chance of transmitting the state transition shift in consciousness it was possible to catch at one of Pauline's workshops, or in her presence, and which is the essence of her work. A state transition shift which was 'caught' in the body, and not on the page.

Not that I was particularly expecting a music dictionary to transmit this, but it highlights a critical issue. Reading the Grove Dictionary of Music entry made me poignantly aware of how impoverished we are in transmitting the living vitality of the work of a great composer whose musical processes expand beyond the domain of the traditional.

I imagine a music student 100 years from now; if the Grove Dictionary of Music (after the entry had been re-written multiple times by multiple authors over 100 years) were all they had to learn about Pauline and her music, the primary body of her work, which resides in the processual unfoldment itself, and in the engagement with the continuum/flux, would be lost.

Canonization which recontextualizes a body of work within the intellectually comfortable does not sustain the living vitality of that body of work. It merely sustains canonization. New approaches which address this are needed, and the 21st century is the time for this to occur, as music's wherein process/content/form collide in a singularity of expression, which have been vanguarded over the last 100 years, provide both the model, and the necessity - the requisite need for new approaches to canonization which can facilitate a rigorous apprehension of what is found entirely in the processual unfoldment - in the continuum/flux - is relevant to all of music, lest we leave a large portion of musical history impenetrable to future generations, lost in the veneer of our own abstractive processes.

This must necessarily imply an approach which expands from atomized lexical unfoldment exclusively into a broader domain of processual exogenation

which illustrates what cannot be explicated in the limited frame of the intellect (as this is the ontological cul-de-sac we are looking out from.).

Historical canonization of Oliveros' work would do well to explore allowing process, content, and form to collide, just as emergent streams alluded to above have. Anything less would be a misapprehension of the direction Oliveros' work is an embodiment of historically, and its revolutionary implications. For in her work, process/content/form not just of musical work, but of 'body and consciousness' collided, producing the complexity transformation mentioned above, and I want future generations to apperceive that, because I have experienced first-hand how profound it is.

The Grove Dictionary could have shared a recording; however, even a recording of one of Pauline's performances does little to transmit the more expanded processual domain which her work inhabited. The Grove Dictionary would have done better to share one of Pauline's pieces (as well as one of her recordings), inviting the reader to perform it, as this would have exogenated the actual terrain of Pauline's work, and transmitted the flavor therein, more competently. Or better yet, a whole battery of pieces and Deep Listening exercises by which to evoke the living vitality of the work for the sincere inquirer. Or even better yet, all of the above, augmented by a textual outlining of the processual underpinnings of her work (which could be done very simply and artfully by someone who worked closely with her), from the perspective within her work, as an addition to the extant text. Thus it would not be a mere reiteration of the extant gaze of objectification upon Pauline's work – instead it

would reflect it isomorphically in its operation. As in Sound, Listening, and Consciousness, the isomorphic similitudes between the various levels of process unfolded by the reader would facilitate a coherent cognitive signal chain more fully than any atomized canonization ever could, and would in turn evoke the living tradition which Deep Listening is.

This discussion unveils another critical issue: the integration of the direction Pauline Oliveros' work vanguarded historically, which intrinsically includes the inculcation of a pedagogy of listening in modern music programs. This is immanent and imperative, and must be advocated for and realized now, lest the momentum of her work fade.

Pedagogical listening and Deep Listening produce musicians with more sensitive ears who have explored the inter-nested fractals of sound deeply, and who can navigate domains of complexity more *facile* as a result, whether through composition or performance, due to the internal navigation within their embodied process of the same complexity territory which their listeners are cognizing their music through. They produce musicologists who can navigate and 'out' their own frames more competently, towards a more rigorous intellectual tradition, because they have apperceived the generative underpinnings of their own frames, from within the body and consciousness as the ground in which they have been fermented. It is quite simply the leading edge of musical pedagogy, and we must encourage all modern music programs to integrate this critical direction as quickly as possible.

Deep Listening is a living activity sustained by the geometries of the implicate – as is all music - in this is reflected a wisdom which can guide us into a regenerative and sustainable future for musicking, wherein the ‘living forward’¹³⁷ of the generative activity underlying the work of its giants expands its domain into one which does not become lost in its own morphoteleological and historical recursions. To do this is merely to allow what has been discovered by our artists, to become what is lived by our tradition.

Second attentional inquiry

Please perform the following:

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds around you in your environment. Consciously drop expectations, judgments, and pre-conceptions about sound completely. Simply allow sound to be as it is. If the mind becomes distracted, whatever the distraction is, do not push it away or give it unnecessary attention; simply allow the distraction to be, as well, and gently bring awareness back to sound, allowing it to be as it is. If you wish, repeat the above process for vision, touch, and all of the other avenues of sense perception before proceeding.

2) (5-10 minutes) Shift your awareness to the inquiry: “what is implicit in the

¹³⁷ In other words, if we believe in the activity they represent, then it is logical to include that activity in all other domains of our tradition.

construction of experience?” Contemplate this question as you observe sound; inquire and answer it not through the normative intellectual faculties of the mind, but rather directly; through the body, through the felt sense, through direct experience - through unfoldment in the continuum/flux; just as one attends to music. If the mind becomes distracted, or comes up with an answer or conclusion, do not push the distraction away or give it unnecessary attention; instead allow the distraction to be, and gently draw awareness back to the inquiry: “what is implicit in the construction of experience?”, relaxing into that inquiry. This is a laboratory of inquiry without needing to arrive at teleological conclusions. Simply observe what is implicit in experience directly without commentary or interpretation.

3) Recall the inquiry from #2 when you compose, rehearse, improvise, listen to, perform, or otherwise interact with music in the near future, and include it in the process. What is implicit in the construction of experience? Or: what is implicit in the construction of musical experience?

THE BIORESONANT

LABARATORY OF DIRECT

EXPERIENCE

What happens when we look honestly, deeply, at everything having to do with the act of musicking? Not as a primarily mental activity, but through the direct observation of unfolding process (whose resultant is the outward enactment and realizations of music history) from within said unfolding process?

At the center of all musicking is listening; as Oliveros' has pointed out, listening is what we do to the raw experience of sound (Oliveros *Deep* xxii). It is how we construct an experience: it is the **activity** at the center of all musicking.

Deny a composer the privilege of listening, and how may she continue to compose? Deny a performer their listening faculty, and how may he engage in the recursive activity of rehearsal and realization? How may he realize, in the vibratory continuum of a musical space, musicking?

If somehow the activity of listening were caused to cease entirely, how would musicking occur at all? Take away any individual instrument, composer, listener, performer, or any other individual element of musicking, and musicking as a whole will continue. But if one takes away the activity of listening, the whole thing ceases. It is the domain of consciousness in musicking, and it illustrates the primacy of such.

Musicking is the science of experience – the science of vibrations in relationship to an experiencer; more comprehensively, the science of the actual vibratory impact of systems (in alignment with Stockhausen’s injunction), as well as their relationship to the experiencer and their experience, as well as an understanding of the ‘gap in between’. Who is this experiencer? What is their function? How did they form? Does their form-genesis mirror those found in musical processes? How do we create vibrations in relation to them in a fashion that is coherent? Our experiences are completely unique: those of musician, performer, and listener, and yet somehow our musicking bridges that gap: there is an inherent communication that occurs. Is this merely statistical complicities in cognition, or something else, a more dynamical activity? What is the relationship between quantum communication, linguistic communication, and musical communication?

In fact, there is no such thing as experience; only **experiencing**¹³⁸ exists. Everything else is just frozen reifications of its activity. When we understand the

¹³⁸I will begin to use ‘experience’ and ‘experiencing’ interchangeably; this is in alignment with the approach previously established in regards to ‘music’ and ‘musicking’. Once again I believe that this is a useful transitional dialectic as the English language catches up with the physical realities of the universe ‘as it is’; we neither need to stretch the current languaging paradigm unnecessarily, nor deny the direction that our language must evolve in order to reflect reality more competently. If we understand implicitly the metaphorical quality of languaging there is no problem. We can comfortably discourse on the stage of what is signified, rather than become lost in our signifiers. Bohm stressed this in

activity that animates the experiencer, the listening, as well as composing and performing - we understand the very **activity** of musicking – a process whose resultant is a musical experience. A **seeming** discontinuity or explicate expression, a seeming frozen frame in the implicate activity of **experiencing**. Consciousness is clearly the activity that animates this unfolding concert stage: in fact, it is animating it right now in an unbroken stream that extends beyond any temporal, conceptual, or spatial constraints.

All of these processes may be understood both through the frame of a **complex dynamical system**, as well as by going beyond this frame; through the frame of an 'experiencer', and simultaneously through going beyond that frame. Each is a metaphorical and explicate expression of the particulars of the observer; **the entire process** of musicking occurs inside what we can approach as a **bioresonant**

Wholeness and the Implicate Order (Bohm *Wholeness*), and I will stress it here, as well, so it should become more and more clear throughout.

While 'musicking' and 'experiencing' are more accurate terminology in terms of vibrational reality, activity, and unfolding process, they can seem awkward at times within the current languaging paradigm. I believe that our dialectical field is clear enough that this metaphorical quality of language is implicit, that when the word 'music' is used, it is *understood* to point to the actual vibrational activity of the universe, and not to a fictional noun which is fundamentally an abstraction of such; that when the word 'experience' is used, it is *understood* to refer to the actual vibrational, unfolding process of 'experiencing', which is what is actually occurring, in spite of old languaging paradigms (and 'experiencing' is actually vibrational, not psychological, as the latter is an unfolded order of the former.).

laboratory of direct experience. This laboratory is both of the nature of a complex dynamical system, as well as that activity which is beyond the scope of that metaphor.

It will become apparent why the “direct” is necessary in **bioresonant laboratory of direct experience:** there is a praxis of understanding that can only be addressed therein, through consciousness, through the body, as Bohm has pointed out (Bohm 1987) (Tisdall). It lies in the relationship between hearing and listening, the direct experience and our mediations of such, as well as our contextual existence within a larger whole, whether it be a tradition, a concert hall, or the implicate whole, which I extend into the realm of musicking in this text.

In the bioresonant laboratory of direct experience we are all scientists, and all musicking has been conceived of, apprehended, experienced, judged, enacted, discarded, or valorized therein throughout all human history. Studying it, the nature of complex dynamical systems, and the enfolded order from which all of these arise, we come to understand **nature in her manner of operation** – not through a limited, atomized intellectual frame, possessed by its own **thingness**, but rather through the only instrument which creates all musicking, as well as all intellectual discourse: consciousness, an instrument whose explicate activities in their diversity are also those of life systems (as we are privileged to experience them). In the course we inevitably confront the body and its **apperceptive** faculty; thus the history of musicking may also be understood as shared embodied process unfolding. What elements do we share, and which do we keep private? Who is the musician who plays

this instrument, or composes this piece¹³⁹? Can we find the limits where they begin, and the rest of musicking ends? This is the ‘hidden’ reason why a composer will be engaging psychological process as aggressively as I will be in this text: as a dynamical systems scientist I must penetrate the generative activity underlying, and psychological process is unavoidable in this pursuit, as it is the veil upon its revelation.

A performer engages in complex recursive processes of listening, enactment, execution, refinement, and **realization** that results in an interpretation. A composer engages in complex recursive processes of creative inspiration, enactment, and internal extrapolation – extrapolating from her own internal experience of sound potential, of musical pathways, and a field of probable musical experiences that a listener might have; this all happens internally, as well as in relationship to external realities. Thus there is an intrinsic field of interactivity.

From this, the composer creates a composition. All of this is enacted or engaged in a body. What are the mechanics of this process? How can understanding the listener help us to understand composition? The field of musical possibilities includes implicit, or inherent, as well as potentially explicit, interactivities¹⁴⁰. How

¹³⁹ This alludes to the principle of listener as composer, which will be explored as we proceed.

¹⁴⁰ Between sound and consciousness, instrument and performer, composer and tradition, etc.; in fact, these can be seen to be analogous to the quantum communication alluded to previously: an exogenation of it.

aware are we of these elements? All of this is an extension of the listening faculty and **can only be studied fully through study of said faculty, by said faculty. For what is looking out, is what we are looking for.** This is the **implicate principle.**

_All exterior reductions fall away, and we perceive what has been going on all along. A musician is, quite simply, a phenomenological scientist of consciousness, or experience. Our listening is the laboratory, the thing studied, and the '**study-er**'. And this is a reflection, itself, upon the very nature of consciousness, whose activity defies the endemic reductions we have been (en)trained to assume.

The qualities of this **bioresonant laboratory of direct experience** will be illustrated to expand into personal, cultural, and historical process; furthermore, we will see through neurobiological research not only its vital efficacy and relevance in fostering new dialectical directions (as Varela and others have already exposed) but that it is a biomimetic mirror of life systems that unveils the very operation of intelligence and creativity: an unfolding fractal isomorphic at every level of creation.

I would like to be able to illustrate by the end of this text that hyperbole, like definitions of music, reveals more about 'the framer' than anything else. I would further like to illustrate how this dialectical lens allows us to penetrate the arenas of cognition, neurobiology, and experience that have seemed hyperbolic at times. I will thus endeavor to gradually 'frame' the inherently metaphorical approach to languaging I wish to speak through, one that complements the inquiratorial lens (and which is intrinsically dynamical, as opposed to atomized). Thus, we will be establishing an empirical, intellectual, and dialectical context wherein the

metaphorical nature of all ‘content’ is implicit (and not ‘artificially’ explicated upon its own artifice).

This is integral to the understanding of music and process we are approaching. Through our initial forays (in the next chapter) into “triangulating” a definition of listening, “biangulating” it (with Deep and Original listening), etc. we will establish various ways of pointing at an activity, which, like musicking, cannot be reduced. One can talk about ‘modes of listening’, as well as implicit listening (as a mode which is ‘not a mode’). Each of the former would be a living metaphor for the latter. Our intrigue into the collision of intellection and empiricism, our exploits into neurobiology, all will demand that we have fostered a flexibility that is not hampered by the need to arrive at masculine endings ontologically; one reminiscent of Husserl's *epoché*. One will note that I have emphasized the cultivation of the neurological competence to allow things to be as they are; this will continue to ripen throughout the text, and more rigorously facilitate this approach.

This will further be linked integrally to our analysis of musicking and cognition, and its isomorphic similitudes throughout various transformations in dynamical systems and their interactivity. It begins essentially with the activity of our own organism as a CDS¹⁴¹. The signified and the signifier must be clarified for any understanding of processual unfoldment to be lucid; in understanding the nature of the perceptual instrument, and its cognitive processes’, we pass beyond the limits of

¹⁴¹ Complex dynamical system.

one dimensional metaphors (between object and subject) and arrive at a place where all of life becomes a dynamical metaphor.

“For what?” is the perennial question. Only processual unfoldment can answer/unveil this competently. This level of metaphor defies traditional languaging and process; hence the *facile* of my implicate methodology. After every single layer of metaphor has been peeled back, what is left? The dynamical, unfolding answer to this question becomes more interesting than any of the metaphors that have been peeled back. What comes and goes (like sound) becomes contrasted by that which never comes and goes; what is inter-nested becomes contrasted by the activity in which inter-nestment is inter-nested, activity which can only be signified through dynamical implication, and never through frozen reification¹⁴².

Music is often considered to be somehow transcendent of the signified/signifier relationship. I do not believe this is completely true; I believe it is only half-truth, an unfinished inquiry: from a certain purview, music is beyond traditional signification, and this is one of the charms and inimitable essentialities of our art. However, beyond the obvious lexical universe we are conditioned to (one thinks of “ear training”) refer to (our psychological algorithms), there is a whole other

¹⁴² As the field of subject/object has been dissolved.

domain, which music is the signifier for, and one which does not refer hyperbolically back to psychology, and thus, to thingness¹⁴³.

This activity unearths the very phenomenological essence and power of musicking as an agent of social, personal, and even natural transformation. As this text unfolds, we will unveil this activity more comprehensively. For the time being, I want it to be clear that we have established a dialectic wherein languaging is radically metaphorical, even beyond the normative (assumed, *a priori*) divide of object/subject. Musicking, as well, is metaphorical. Musicking, and languaging, like every other phenomenon in nature, comes and goes. Everything that comes and goes is metaphorical for that which does not come and go. As we engage in processual unfoldment, and observe the attack, sustain, and decay of phenomena directly, we gradually come into deeper relationship with what does not come and go, and become oriented to it¹⁴⁴.

Lest I be accused of being “too metaphysical” or “soft” at this juncture, let me rejoin by saying it is so **immanent**, so near (even nearer than our nose or our

¹⁴³ For the genesis of psychology is the same as that of the object: it occurs inherently in relation to the subject, or the conscious observer (n). In the field of listening, understanding of this constitutes the difference between unconscious atomization of interactivity, and unfolding dynamical interactivity in an infinite continuum of unfoldment.

¹⁴⁴ We cannot, in the end, talk about what does not come and go competently with words that come and go. Once again, processual unfoldment is our saving grace, and the territory of revelation.

heartbeat), this activity. Even the experiential inquiry must be engaged differently - usually engaged to understand what 'one' is in relationship to and in interactivity with more integrally, this approach will fall, eventually, into the same traps as traditional intellectual approaches - that of looking out from, or hearing out from one's own *a priori* assumptions, to the degree that one never disentangles from them. In some sense, there is no inquiry at that point - inquirer and inquiry become one; what is immanent is impossible to inquire into as there is no point A and point B to traverse.

At the same time, process is essential and will continue to be stressed, as well as the unveiling of a dialectic which can handle the immanent, the implicate, and the self-evident. From music as metaphorless, to music as metaphor, to what is truly metaphorless, and beyond, is our unfolding inquiry. In some sense, if we're not a little confused along the way, we haven't really broached ripe territory for inquiry, as the terrain is implicitly the unknown and the unknowable - at least this is true contingent upon how we define knowing, or rather which modes of knowing we choose to participate in (and if we understand that true progress is involved with inhabiting the leading edge of processual space).

Listening, in the end, is a metaphor for this elusive activity, and is metaphorless, simultaneously. Embracing the seeming incommensurabilities of this terrain will be essential to our success herein. I will continue to denote (n) and (a) to highlight where languaging has impoverished us and disconnected us from competent processual awareness. My hope is that in so doing we can unite the purposes of our shared intellectual/empirical biangulation and unveil the generative activity

underlying not just all of our musicking, but all of our living and being, as well. I do this not out of a grandiose self-importance, but because the inquiry naturally leads there when followed through completely; thus what began as an inquiry into sound inevitably leads into all life processes. I wish our inquiry to progress to the point where even the body, experience, and other natural processes are understood to be dynamical metaphors, like music, for the fundamental underlying activity which organizes them. As mentioned in the preface, this is, in the end, entirely an “inside job”.

Dynamical Listening Observations

(as report from within the system of the system’s activity)

In the expanse of unfolding process, one is left in the final analysis to face the only actor on the stage: one's self. This is either an atomized point, or the conspicuous absence of such, at least from the fading modern purview. The album Deep Listening exudes an implicit invitation to listen more deeply: I don't just say this because of its name; but because this is intrinsically “there” in the unfoldment of process (acoustical space in interactivity with human embodied process) which exogenates the musical imagination of the human organisms engaged in deep musical inquiry, organically, in this recording. I find myself asking “where” this is coming from within the performers; is it a “where” that can be located on/in a spatialized grid? A topographical map? A vacuum?

My brain and body relax into an expanded, open state – one might even call it a “stateless” state, if state must be considered an atomized, fixed frame in consciousness. Frame of reference means something different here: it's not something that pulls me back to “it”, not an arrival point to end on comfortably, but rather a praxis from which to leap off more deeply.

I am listening with another person: I feel I am listening to the other person, intrinsically, as well – I am not trying; it is an implicit activity, like gravity. Listening is different, and somehow the same, with another.

Similarly, I find I am listening implicitly to everything in the environment (of the cistern in Deep Listening, as well as of the space I am in) – I do not choose to listen to these elements or not, to merge with them or not – I can only pretend not to be part of their activity, and only at great effort. Deep Listening is happening, whether I am available for it, or not.

In short, with Deep Listening, because the reference point is not an absolute¹⁴⁵, my experiential interplay with it leads me to an experience of boundlessness, intrinsically. The performance transmits the geometries of its own generative activity: the listener naturally discovers her own deep along the way. Secret lexicons, cosmic explosions, wild encounters, and subsequent dialogues... the performance illustrates that natural hyperabstraction of vibration propagating in acoustical space can sound like electro-acoustic music-production, among so many

¹⁴⁵ At least in terms of reified absolutes.

other wonderful things – illustrating the reach of this isomorphic similitude across all domains, beyond even the apparent divide of the technocratic, beyond even the apparent divide of supposed filters.

In Deep Listening, I find the cosmos, primordial vacuum, transdimensional languaging, and original synchrony- as well as a sense that if there is a human potential, it is definitely beyond what we can fathom with the atomized mind. It takes the entire instrument.

Third attentional inquiry

Please perform the following (this is an adaptation of Pauline Oliveros' meta-listening exercise) on the instrument:

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds around you in your environment. Consciously drop expectations, judgments, and pre-conceptions about sound. Simply allow sound to be as it is. If the mind becomes distracted, whatever the distraction is, do not push it away or give it unnecessary attention; simply allow the distraction to be, and gently bring awareness back to sound, allowing it to be as it is.

2) (5-10 minutes) Shift attention to attention itself. Listen to the listening. If the mind becomes distracted, do not push the distraction away or give it unnecessary attention; instead allow the distraction to be, and gently bring attention back to attention itself. Listen to the listening.

3) Recall the inquiry from #2 when you compose, rehearse, improvise, listen

to, perform, or otherwise interact with music in the near future, and include it in the process.

LISTENING

“... if we do listen deeply that is the greatest miracle.”

– J. Krishnamurti

Listening is ‘our part in the process’, so to speak, whether we are consciously aware of it or not, and to the degree to which we understand who/what that ‘our’ is. It is, as has been pointed out already, what we do to the raw experience of sound, or hearing (Oliveros *Deep* xxii.). As we know, hearing is occurring all of the time, even when we sleep¹⁴⁶. It thus is an activity that occurs, not one ‘done’, and thus cannot be linked to the conscious observer exclusively. Rather, we must **unveil** the processual unfoldment of listening and **how** what we do shapes, and is shaped by it.

I’ll give three ‘definitions’ of listening up front, without the presumption that any will point towards a reified absolute; rather, these will triangulate an **implicit**

¹⁴⁶ The question is: does listening occur while we sleep?

activity. This will further exogenate an illustration of the activity of biangulation that our empirical/intellectual inquiry seeks to embody, as well as the metaphor-competent dialectic we seek to foster more broadly in this text¹⁴⁷. Each is a dynamical metaphor for an **activity**, an implicit activity, and thus intended to orient us in the right direction with regards to **our own unfolding process** (this is music as an “inside job”). So, with that in mind, my ‘definitions’ of listening: listening is: #1) sonic attention, #2) the **interactivity** between sound and consciousness, and #3) the activity implicit in #1) and #2)¹⁴⁸

What is most interesting to me is the ways in which we mediate sound: what happens between vibratory reality, and psychological experience. This has culminated in a sort of glass ceiling at this moment in history, where the only way to go is through. The days of unconscious reiteration of habitually entrained listening patterns are over; the mediations that result from this blind recursion are what divide us from the direct experience, or at least seem to, as the latter exist(ed)(s) at the center of all constructed experience whether consciously apperceived or not. I believe it is, in fact,

¹⁴⁷ Which will further be expanded into multiple domains as we proceed.

¹⁴⁸ As well as that implicit in #3.

a historical imperative to break through this phenomenological¹⁴⁹ glass ceiling at this moment.

Listening is an **activity** occurring right now: can you pay attention to it? The fact that you **can** observe the activity of your listening has profound implications in and of itself, and in particular with regards to consciousness. Consciousness is both animating, as well as observing, the phenomenon, or activity at hand. Consciousness is thus not a linear activity; a microscope that possesses ‘itself’¹⁵⁰ as a static object in relationship to a singular and similarly static ‘object’ of inquiry; a line that can be drawn between ‘A’ and ‘B’.

This ‘instrument’ can have **itself as an object of inquiry** (‘self’ as activity), as well as ‘exterior’ activities (sharing the same field, or continuum) in multiplicity and interactivity infinite¹⁵¹. This is a property embodied not by scientific instruments, but rather by interactive as well as natural systems. Listening (and consciousness) are

¹⁴⁹ As is illustrated by the work of Alva Noë and the enactivists.

¹⁵¹ Apparent linearity between systems breaks down in dynamical interactivity.

multi-dimensional in nature¹⁵², and of the nature of inter-nested orders; as we observe the unfolding of process from within, this becomes apparent. Our linear descriptions of such are reductions; the reality is more like standing in the center of an enormous prism and observing the resultant refractions of light unfoldment as they surround us; it is multi-dimensional, and of the nature of enfolded/unfolded orders.

Consciousness is also of the nature of enfolded/unfolded orders, as Bohm describes them; the implicate whole is a ‘frame’¹⁵³ within which this multiplicity becomes embodied by infinite processes that unfold within it. Consciousness is not linear, hierarchical, or teleological, at least not in its **original or natural** generative unfoldment/activity; these come into play only in explicate reductions of it.

Listening, which is generally an explicate form of consciousness, is itself a complex dynamical system. We will be exploring the nature of complex dynamical systems, as well as those that listening is specifically in intimate conversation with: neurobiology, psychology, the body, culture, tradition, nature, etc. later on in this paper. In the end listening is, like musicking, a resultant of the activity of all life

¹⁵² Bolay et al. use the metaphor of consciousness as multi-dimensional, as well, in their 2008 study of intrinsic brain activity. Oliveros, in addition, has discussed the multi-dimensional nature of listening (Oliveros *Deep* 15).

¹⁵³ Placed in quotes because it is a frame which is not a frame.

processes; it leads us into an understanding of all life, and we cannot truly understand listening without understanding all of life, through the LODE¹⁵⁴ and the intelligence it embodies. I personally believe that this is implicate: not the position of an individual, but rather the observation of an emergent phenomenon in the field; a corroborable fact.

The suggestion herein is that we can talk about an original listening, a deep listening, or an **implicate listening**: an **activity** which all of these point to, and which is prior to them. An activity which is **revealed** (not **done**) through embodied process (which peels back the layers, so to speak), and which we can reorient if we understand this. Deep Listening is what happens when one goes so deep in their musical process that they break through the apparent boundaries of conditioning and filtration and emerge into a realm of synchrony and creative possibility that literally revolutionizes the entire dynamical system, its creative activity. I wouldn't say this if I hadn't experienced it myself¹⁵⁵.

¹⁵⁴ Bioresonant Laboratory of Direct Experience, implicit in human experience.

¹⁵⁵ Another way of saying this is to say that Deep Listening is what occurs when the conscious 'doer' gets out of the way. I once had the opportunity to ask Pauline Oliveros if she agreed with this statement, and she replied "yes". Paradoxically then, Deep Listening is both 'our part in the process', and simultaneously, when we understand the nature of said process, removing ourselves from the process (to the degree to which we consider ourselves to be a conscious observer [n]) is our most integral part in the process, as it facilitates the intrinsic self-organizing quality of the system emerging more fully.

That very same activity can aptly be described as original listening: when the proverbial waters of the built perceptual universe of the human sonisphere part, an intrinsic activity is revealed which is discovered to be of the nature of synchrony and creative possibility, and which was present beneath the surface all along, animating the entire thing.

So deep listening can be understood to be an activity which is both discovered, and also generatively at play beneath the surface all of the time; *a posteriori*. The human identity, what I call the self-same attractor in the center of the dynamical system, desperately does not want to admit the possibility of an original listening. This is because the import of this activity is that we do not do creativity in the way that we believe we do; this is literally wall-shattering to the self-same attractor. In fact, it shatters its entire world. But when the rubble has been cleared, one comes finally to the realization of how we actually do 'do' creativity; furthermore, the rubble is understood to have been the walls of our own self-constructed perceptual prison, and not so momentous in the losing.

These two terms (deep and original listening) describe the same activity: one from the *a priori* activity, the other from the *a posteriori*. One from the purview of

the psychologically built universe of human beings¹⁵⁶, the other from the purview of the activity prior to, and animating it.

Furthermore, both terms are metaphors for an activity implicit. Thus implicate listening as a useful phrase, as this unveils listening to be a living metaphor not posed by man, one which leads us back to the generative activity of all life when pursued rigorously, and which can in turn reveal **everything** in the realm of sound through simple observation and extrapolation.

As mentioned above, it is not ‘done’ in the traditional sense; certainly it can be enacted (as principles will be seen to be enacted in facilitation settings, illustrating explicate generative properties) and is itself a resultant of larger unfolding generative processes, but it is not ‘done’ in the sense that necessitates a psychological actor (implicitly absent from this stage when searched for); its activity must be understood from a larger purview, if it is to be understood at all.

Deep listening is **unmediated** by psychological processes and their self-valorizing recursive generative activities¹⁵⁷; it is the direct experience in the domain of sound, **unbound** by these interventions. It does not reject them, either. It is quite

¹⁵⁶ In the world of actors, the actor “goes deep”. When one goes deep enough, even the actor and stage disappear. Listening occurs even when “I” am not doing a thing - thus original listening is concomitant to deep listening.

¹⁵⁷ Which we will distinguish later from biological mediations, and their functional utility.

simply, **implicit**. For the direct experience is unfolding process, as well, just as is every other metaphor in this paper; a continual flux emerging from the field: **experiencing**, unveiled in its natural activity. I have stated above that listening is generally an **explicate form of consciousness**; Deep Listening is intrinsically an **implicate activity**: it is synonymous with implicate listening, as well as with the activity of the implicate order. It is not an implicate ‘form’ of consciousness because there is no form at the level of the implicate whole. It is rather the **unveiling** of the activity of consciousness at the level of the implicate order. This unveiling is an unbroken unfoldment. Deep Listening is merely the activity that remains when all other activities have fallen away; simple observation facilitates this.

The activity of listening is always occurring; some would argue only as long as we are awake and conscious, but I (and many others [IONE]) believe we still construct a sonic experience while sleeping. In terms of psychological process, we may continue along habitual pathways as instruments of their recursion, but the possibilities, once one’s own activity has been observed directly, are much more profound: there is a possibility for activity beyond these recursions. For implicate listening.

We can literally disentangle from the distortions of psychological process (which include those of tradition, enculturation, and musical training) and retrain our instrument (consciousness, as well as its constituents mediation through the body, neurobiology, etc.) to be an instrument of the activity of life, of infinite possibilities, rather than a recursion of limited possibilities: when the neurobiology is reoriented in

this way, infinite new potentials emerge from the quantum field to fill the vacuum created. They fill the **spaciousness**; ‘form’-genesis thus dissolves into a completely *a posteriori* generative activity which is both in conversation with, as well as being independent from morphogenesis as traditionally conceived of.

In terms of perception, a prior activity which is lucid, a la Schafer’s concept of “clean hearing” emerges; in terms of psychology, a cognitive inversion occurs (which extends into biology), which gives direct experience the reins, instead of placing the reins on psychology; this not only leads to Deep Listening (an activity which is always occurring, but obscured by psychological process), but to the path forward for our tradition, as well as our world at large. Both are equally a natural ferment of the system exogenating its own generative activity, as revealed through an embodied process of disentanglement.

When disentanglement occurs, neurobiology becomes cleaned of its mediative debris, its arbitrate habits; accumulated from culture, conditioning, and unexamined experience¹⁵⁸, and the directions unveiled by this literally revolutionize the act of musicking. One could say that Deep Listening is what occurs naturally when the frame of the observer has been disentangled from this “mediative debris”¹⁵⁹, to the

¹⁵⁸ In alignment with Aristotle’s notion that the unexamined life is not worth living; a musician who has not examined his own experience is unconscious to what is generatively creating his musicking; all the while he pretends that “he” is doing it.

point that frames are no longer necessary for its operation in **the dependent fashion** **habitually conditioned**, and that this is implicit; listening then literally becomes nature in her manner of operation (rather than man in his). Later on in this paper, I will explore this metaphor of disentangled listening, along with the metaphor of a larger process of disentanglement¹⁶⁰, as a way of looking at what is already emerging in the tradition, a culmination of thousands of years of embodied process in human civilization, our awakening from the sleep of our own unconscious recursions. Implicate listening is the source to which sonic attention returns naturally when the self-equilibration of the system is allowed to operate; it is what is left when the process of disentanglement has laid everything bare.

When our neurobiology is cleared of incessant, recursive expressions of unnecessary mediation that keep it circling in tiny cul-de-sacs of ‘creative’ expression, true creativity can occur. The activity of life, tradition, and the individual can express themselves in fresh and musically coherent ways: the psychological processes become an instrument of listening and of enfolded potentials of higher coherence and synchrony in the field, rather than listening an instrument of psychological processes, whether the forum is canonical interpretation, or radical performance art. The intrinsic activity of the brain points further towards this: it

¹⁶⁰ This process is inevitable in embodied inquiry; the somatic unfolding of this process is illustrated excellently in Doug Van Nort’s personal account “Noise to Signal: Deep Listening and the Windowed Line” (Oliveros *Deep* 69-72)

comprises 95% of the activity occurring all of the time (Raichle 2015). It is the vanity of humans to valorize the 5% involved with conscious activity, and the self constructed within it, to the degree that 1) the urban myth that we use only 5% of our brain (and that somehow we are supposed to consciously direct the other 95%) persists and 2) most neurobiological research has focused on this fragment of brain function exclusively until recently.

We're actually using 100% of our brain all of the time, it's just not intended for the conscious observer, just as nature is not intended exclusively for man. The 5% of the brain associated with the conscious actor in relationship to the 100% of the brain, the implicate whole, forms a perfect analogy to the relationship between the explicate and implicate order. When disentanglement occurs, does the intrinsic activity of the brain self-organize, liberated from presumptuous notions of what the conscious observer is and what their role in the process is, just as the intrinsic activity of nature¹⁶¹ does when liberated from human intervention and colonization? Deep listening, the enactment of non-intentionality in composition, interactive systems, as well as other emergent streams of music over the last 100 years point to this even more explicitly; the possibility of using 100% of our brain by ceasing this fiction of

¹⁶¹ Observed in the entire canon of the natural sciences, which comprehensively catalogue this activity. Its literature contains a veritable library of this interactivity; water transfer between roots and soil, the bacterial interactivity in the human gut, hydrological patterns of the topology, *ad infinitum*.

being separate from the activity of life, as well as of being in the position to ‘wield’ and control it. The ‘self’ is discovered to be a sort of statistical complicity, similar to those in regards to the objective/subjective illusion, which we participate in to a lesser or greater degree based upon our awareness of such¹⁶². These issues, as well as the exciting properties of self-referentiality revealed in neuro-imaging studies, will be discussed more in-depth in the sections which focus on neurobiology.

Listening is an activity which occurs all of the time, but it may take infinite forms. Once we understand that our musical experience is both the last link in the signal chain, and completely constructed from within, we understand that musicking is a phenomenological science of experience, and our opportunity is to, through conscious engagement with such, revolutionize our music-making. I will make a grandiose claim here: that the multiplicity within is even greater than the multiplicity without, for those brave enough to dive head first into that ocean. All genius, all ‘bolts from the blue’, have been a product of this dive, a resultant of that activity: the inherent confrontation of the unknown, from the genesis of mankind, and it is the true province of human beings. What we are talking about is the leading edge of consciousness; if we visualize the activity of consciousness as a dynamical system, the confrontation of the unknown (from the inside) is concomitant to state transitions in the system (on the outside). In other words, I argue, when a system shifts from one

¹⁶² From a sort of modified Bayesian analysis.

pattern of organization to the next, the purview of the conscious observer from within this phenomenon is inherently linked to the phenomenon of the unknown.

Now let's consciously cross the intellection/empiricism "divide" a little further. I will report the activity of this dynamical system, from within the dynamical system: my experience. Thus it is neither "right" nor "wrong", it is **data** from the instrument; when I observe the leading edge within my own consciousness (I have to find it first), the resultant somatic experience I have to report is one of **spaciousness**.

One may come into relationship to this process in their own empirical instrument by joining with it; in this case, one must find their own leading edge. Listen to musicking you consider to be avante-garde (but not avante-garde you 'know'; it has to be musicking that challenges you, that pushes you into new territory). Or go to the leading edge of your creative process in some domain – improvise or compose in a way that brings you into confrontation with the unknown, outside of your comfort zones. Basically, perform an activity which takes you to the leading edge of your own creative inquiry, intrinsically into confrontation with the unknown. At this moment, the dynamical system is intrinsically participating in a generative activity which is not sourced in previous forms, form-genesis', ideas and concepts about music, etc. Thus the output of the system will give us data about that particular generative activity.

So observe what the somatic feedback of the system is as you perform this activity. For me, there was a consistent (sub-lingual) experience of spaciousness

correlated to the exterior expansion of the system into new creative territory which was apparent once brought to consciousness.

I believe this is intimately connected to the activity of the avant garde, new scientific inquiry, and all activities of consciousness, and is usefully contextualized within our triangulation conversation; in this instance, I am observing the expansion of the field (that which the avant garde represents, the leading edge of consciousness) from the inside of the system. From the outside of the system, it looks like the activity of the avant-garde; from the inside, it appears as a somatic **experience** of spaciousness at a very detailed level of observation¹⁶³. Is this why Buddhist Monks and skilled musicians exhibit the same neural synchronies (Dobbs)? This is actually a very logical and simple observation from a dynamical systems analysis which we will illustrate scientifically later. Simply, I am wanting to make it clear that correlations between the interior and exterior report of the system provide the key to a new domain of understanding of the operation of the system; the intrinsic activity of the brain unveils that our entire attitude towards our own generative (creative) activity has been hyperbolically framed by the conscious observer. Thus, we must come into new domains of conversation in regards to the generative activity exogenated by the organism.

¹⁶³Obviously different systems may exhibit different reports.

There can furthermore be seen an element of response-ability in engaging this process, that of conscious engagement with our listening. A musician becomes a sort of experiential phenomenologist in regards to sound; the ways and means of engaging the reality of this comprise their musical processes, their musical art: fundamentally an *a posteriori* laboratory – or, as I argue in this paper, a bioresonant laboratory of direct experience. The fruits of this laboratory are more near to the raw quantum information of the universe than they are to the reductionist knowledge of the dominant paradigm, and thus we must disengage from the latter to be in true conversation with the former; quite simply, we as musicians have something profound to midwife in terms of the dominant paradigm and its reductionist habits, their future, and their hyperbolic nature when placed against the actual vibratory activity of the universe, apperceived in the continuum/flux by a competently embodied musician. We are processual genius (a) when ripened fully. We will come to see that the subjective and the objective are not, as William James and Dewey have pointed out, as immune to framing as we have naively believed them to be – they are artificial (Reybrouck 2006), and thus we must throw everything we presume to know about what knowledge is artificial, and what is real, out the window¹⁶⁴.

The musician studies, through various embodied means, the science of vibratory patterns in relation to **themselves, the organism they are,** as well as how

¹⁶⁴As it is upon the basis of the subjective/objective that we have apparently come to solid ground in this domain.

these relate to coherence as a multi-dimensional phenomenon; using this, they are able to create music that is coherent to other **experiencers, or listeners**. Explicate activities of ‘experiencing’, if we want to get right down to it in the simple, direct, and honest. Dynamical systems in operation. Hence unless they ‘know themselves’ as in to ‘know their own generative activity’, their musicking will invariably be unconscious reiteration of activities they’ve inculcated, rather than deeper enfolded orders of the system which it is possible of becoming. All musicking will be seen herein to be a resultant of our competence in the realm of **coherency** **apperception**¹⁶⁵, and this begins with our listening, for the listening has the power to reorient this faculty.

¹⁶⁵My notion of apperception will be allowed to unfold naturally throughout the text, as it is integrally linked to the unfolding of consciousness, neurobiology, and the ways that we construct meaning, specifically in regards to music. It is related to the epistemological definition, as well as Kant’s notion of transcendental apperception, but is independent of both. In general in this paper, one must note that applying the injunction to suspend judgment is crucial; as process is meant to reflect content, I have chosen very carefully what to programmatically explain up front (reflecting explicate intelligence and the associated modes of inquiry), and what to unceremoniously allow to unfold and explain *itself* through process (the implicate mode). This is in fact the only way to do it competently with the subject matter I have chosen, and this will be illustrated as part and parcel of this process, as well as being illustration of process. It will generatively reveal the crucial *cognitive inversion*; crucial in understanding my view of musicking, life, neurobiology, consciousness, and even ecology and politics, if I may be a little provocative at this juncture.

The problem of the self is key. The neurobiology of mirror neurons, as well as observation of our own experience, will be shown to corroborate this: that our own internal ‘listener’ is actually creating all of our musicking, not just the listener’s activity, but that of the musician, as well. And the listener’s (in an actual concert hall) activity is creating the musician’s activity, as well, and vice versa – that in fact all dynamical systems (explicate expressions) interpenetrate until you come to the realization that literally **everything** is a resultant of the implicate whole¹⁶⁶. Even consciousness.

In terms of the avante-garde, which I believe is about remaining on, and articulating, the leading edge of culture, we will come to see that the key to this is remaining at the leading edge of one’s own unfolding process of consciousness, and thus one’s own embodied process, internally. That ‘knowing one’s self’, not in the intellectual sense, but in a visceral, quantum, unfolding fashion, is the praxis. We, in many ways, know very little about this **experienter**. Who are they? What is their nature? **How** do they function? How do they arrive at, and apperceive, coherency? What is coherency? What is the psychological **experience** of coherency? What does

¹⁶⁶So when we talk about listening creating our musical experience, it is not as one-dimensional as it may seem at first. Listening is in deep conversation with all physical and cultural processes, as well as natural processes. It, like the conscious observer, cannot be atomized into a “thing”. Thus this reinforces the refrain, that only through embodied inquiry can we move forward with a competency that can navigate the complexities of infinitely unfolding and interpenetrating dynamical systems. Only through a confrontation of the continuum/flux, and, intrinsically, the unknown, can this occur.

coherency mean in the context of natural and vibratory systems? What is the difference, what is their interactivity, and how do we close this gap? Is this gap ‘real’?

And most importantly: how do we create vibratory systems (expressions of musicking) in relation to the listener that are consistent with this; that render the entire activity of musicking coherent? When we understand this we understand the activity of musicking itself– a process whose resultant is, in the end, the experience of the listener, not our canonical valorizations and teleological assumptions of what this means. And at a deeper level of inquiry, the experience of the listener is a metaphor for a deeper layer that interpenetrates with the nature of vibratory systems directly, and how we relate to that, as well as all of the complexities in addressing this.

I believe that listening, as well as the construction of experience in general, has been enacted as fundamentally a manipulative act up to this point in history¹⁶⁷, and I believe that we can corroborate this simply through examination of our own cognition from within. I believe that there are ‘sound’ reasons for this evolutionary stage, but that the inherent self-valorizing generative activity at its core is crippling our ability to move forward in musicking as well as in the species at large, and that its resolution implicitly points towards a ‘sound’ trajectory for our tradition (and world) moving forward. It is as if we have arrived at the end of the movement, and the

¹⁶⁷And this is certainly reminiscent of Marx; one could say that in music, we are fighting over control of the means of production: consciousness, rather than liberating it, as we ‘should’.

conductor has unexpectedly passed inexplicably; the instrumentalists, not knowing what to do, keep playing, repeating the phrase he passed away on, stuck in a nightmare of lexical recursion, and not sure how to proceed. The next movement inherently includes a confrontation of the implicate. Of what is right here, right now, in the continuum/flux. We just need to move on to it.

“It may then be claimed that beauty exists everywhere and this I do not deny, though I prefer the clearer statement that it may be discovered anywhere.”

(Coomaraswamy *The Dance* 38-39) Art has been about controlling the modes of production; it should be about revolutionizing these. We understand more about cognition and our place in the cosmos than ever before: what lies ahead is art which is infinitely more self-aware in her manner of operation.

In Coomaraswamy's statement above is alluded to a possible direction which not only revolutionizes our art-making; it puts it out of business (at least in terms of its **current modes of production**). Are we going to be like the aged typewriter repair man, who denies the very existence of computers, and discourages all of his customers from its use?

Deep Listening and other emergent directions represent a reautonomization of consciousness which only disturbs those constituents of musicking that would retain control of the modes of production of consciousness. The transformations in process

that these embodied process facilitate¹⁶⁸ are so radical that to not embrace them is like riding a horse and carriage buggy when there is a fully shopped and shined Porsche gathering dust in the garage. To engage in an embodied process that retains unconsciousness (n) when these emergent streams have exposed processual awareness apperceptive of itself and the operations of its own organism, and whose engagement is thus operated in a completely different order of organization than what we've seen before, is difficult to understand from the purview of one who has walked down that road and observed its exogenation from within.

We can corroborate through our own experience that the recursive 'stuck place' metaphorically illustrated by the ensemble previously is not the only potential for our tradition: that there are radical new possibilities in listening that musicking can point towards in its exogenation; open systems in every instance. Even a canonical piece (n) can be performed with an awareness of the open system in which it arises. Decanonization (a) does not mean the genocide of canonical works; it is commensurate to their resurrection.

What happens when we pop the cork off the bottle of our morphogenetic frames? Is the body an open system or a closed system? And does our awareness reflect cognition of said fact? Intrinsic to this is a confrontation of the unknown, which the recursive self-same attractor in explicate intelligence is obsessed with

¹⁶⁸ Through the enactment of vibratory patterns isomorphic throughout the open system, as *action*, whether through Deep Listening or any other embodied inquiry.

staving off in a habitual drive towards masculine endings. Conclusions and the false security therein are the bane of western civilization, as well as of creative process.

The unknown is only framed in terms of a concept of ‘the known’, which is fundamentally a teleological activity in the West. To ‘know’ (a) - as in to ‘do something to something’¹⁶⁹, to reduce it from its natural vibratory activity – every-‘thing’ is a purely teleological end, an impossible absolute, like attempting to arrest/freeze the vibratory activity of sound as it is. There are, obviously, different modus’ of knowledge than this, but in the West we are experiencing a historical over-preferencing of this one currently.

We are always listening with the entire body, but this fact has been mediated through so many layers of psychological process that it seems impossible to assert. Only in the praxis of embodied process may this be observed and understood; the listening activity may primarily **occur** in the brain, but it is in such intimate quantum communication with all of the body processes, co-informing and co-arising, that the resultant is an instantaneous apperception beyond atomized notions of perception, and to study it separately merely creates more atomized frames; more fragmentations of consciousness. This inherently excludes elements of the overall continuum, which

¹⁶⁹ Reminiscent of McClary’s infamous observations of Bheetoven’s 9th in the *Minnesota Composers Forum Newsletter*. One can draw an analogy between the deconstruction of the impulse ‘to know’ outlined above, and the feminist implications of McClary’s commentary, as well as deconstructions of our historical relationship to nature, and the impulse to dominate engendered by each.

inevitably also produces fragmented understanding. When I observe my own listening, the entire body is involved in intimate conversation with it. I believe if you review your own library of listening experiences, including in concert halls, playing an instrument, composing music, outdoor concerts, internal silence – all occurred in a body, as well as in intimate conversation with all elements of that body, did they not? What happens when we ‘out’ this conversation more fully?

What happens when we examine our own cognitive processes from within? What are the possibilities of a **cognitive inversion** that vanguards the musical directions alluded to so far (in terms of the avant-garde)? As musicking is the science of experience, our laboratory is **the bioresonant laboratory of direct experience**. This is what we are already doing; all of cultural history in regards to music, as an example, can be seen as cultural enactment of the unfoldment of consciousness: from the processes of nature, onto the stage of neurobiology, and into action: simply, musical realization. Bringing musicking into the light of consciousness, we radically potentiate new avenues that revolutionize our entire trajectory, as well as our ‘experienced’ past.

Fourth attentional inquiry

Please perform the following on the instrument:

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds in your environment. Consciously drop expectations, judgments, and pre-conceptions about sound. Just allow sound to be as it is. If the mind becomes distracted, do not push the distraction away or give it unnecessary attention; instead allow the distraction to be, as well, and gently bring awareness back to sound, allowing it to be as it is.

2) (5-10 minutes) Notice how sound enters the body. If the mind becomes distracted, do not push the distraction away or give it unnecessary attention; instead allow the distraction to be. Drop all notions of how sound enters the body, and simply observe the activity of it. Can you allow that to be without adding any conceptual filters? How does sound interact with the body? How does the body interact with sound? How does sound elicit responses in the body? How does the body elicit certain responses in sound?

3) Recall the inquiry from #2 when you compose, rehearse, improvise, listen to, perform, or otherwise interact with music, and include it in the process.

MUSICKING: AN EMBODIED ART

Before we proceed, I'd like to discuss the body, and I'd like us to begin seeing it as unfolding process, as well. The body is the instrument through which all experience and musicking is mediated¹⁷⁰, and through which all of our attentional inquiries will be/have been¹⁷¹ enacted. There is no music without a body; no act of musicking has been realized without one, whether through the internal enactment of listening, or outward action of realization. To not consider its importance is akin to

¹⁷⁰ Forming an analogy between direct experience/mediations thereof, the implicate/explicate, etc: consciousness is the instrument which produces all music, *through* the body as mediative instrument, as an unfolded order of itself; of course this is to anthropomorphize a 'self' not intrinsically there. The fact that consciousness, the body, and listening can all be meaningfully discussed as *the only instrument which produces all musicking* will become an essential praxis of revelation as we proceed; in the SLODE, it is impossible to find the demarcation line between each.

So we can disparately claim consciousness, the body, and listening to be the *only* instrument which creates all music, as well as musician as scientist in the laboratory of consciousness, experience, and experiencing respectively; this *apparent* hyperbole illustrates the triangulation concept that will also animate our implicate/explicate metaphor in biangulatory form. Implicate in these is that in fact each trio forms a unity: each points to the same activity, and reminds us of the metaphorical nature of our languaging (whether in the traditional arena of languaging, or in music).

¹⁷¹ From the understanding that all musicking, musicology, etc. historically is an enactment of attentional inquiries; primarily subliminally, or unconsciously, up to the time of Oliveros' work in the modern era, but including actors throughout history (such as the Pythagoreans, the Nada Yogis, and also Pierre Schaeffer (Smallwood), as just a few examples).

not considering the importance of acoustical space, as this too has been present for all musicking. We give significant attention to instruments that come and go (like a violin, a mridanga, or a flute): the body, like consciousness, as well as listening, is the **only** instrument that has been present for all human musicking.

Further, the body is the **only** window we have into the totality of the territory left behind when the subjective/objective illusion dissolves, as this territory unfolds within it, and it holds the key to understanding our abstractions, as well as our hyperabstractive capacitance, which is in seemingly hyperbolic relationship to such. So our engagement of the praxis of direct experience is inseparable from the engagement of the body, and her processes.

The body is thus the only window we have into all of the processes of music, and barring the understanding of its role therein, our perspective is severely impoverished. An exploration of biology, neurology, and their role in the construction of musical experience will thus be integral. How does the body become the receptacle for memory, associative matrices around sound, etc. and **how do we relate to that?** Implicitly (as has been the historical precedent), or explicitly? Unconsciously (a)¹⁷², or consciously (a)?

Electronic recordings, tools, and interactive instruments are akin to the abstracted instruments of science; veritable artificial limbs whose ‘information’ is

¹⁷²In this case unconscious (a) must be distinguished from unconscious (n).

only turned into thus through our bodies and the phenomenon of “experience”, and through our resultant contextualization of them (Reybrouck) through it. Thus all of musicking is an **embodied process** already. Whether your artificial limbs are oboes or AUMI, EMI or the phone book, a conductor’s wand or the remote control of a stereo, they are extensions fundamentally of said embodied process, which begin **at** the body.¹⁷³

What is your embodied process? Do you compose in the same chair, in the same room, every single time? Do you wake up in the middle of the night furiously writing down ideas before they disappear from whatever mysterious place they arrived from? Do you find melodies in the sound of birds as you walk in the park, and then parse them through synthetic modes that tickle your fancy? Why do they tickle your fancy¹⁷⁴? Do you rigorously exercise mechanical skill to the choreography of a score (a fairly common embodied process in our tradition) until it is programmed into your cells, and will unfold ‘the same’ in every acoustical space (or at least appear to)? Do you obsess about your instrument, even when you are not playing it, until your relationship with it is more intricate in its interactivity than that with your partner, as

¹⁷³From one perspective, all of nature is an artificial limb extending our embodied process through our interactivity with it (this is in no way intended to imply a sense of entitlement over her). A rather abstract perspective, but one whose merits are easy to underestimate; conversely, we are artificial limbs of her body (from another perspective).

¹⁷⁴And can you really answer this question without dialoguing with the body? Do you think Messiaen composed in a body? The answer is implicit....

a way of facilitating your musicking process (and ignoring your partner)? Do you meditate until no trace of psychological actor remains and then trust what emerges from that?

Clearly, just as there are infinite forms of sonic attention, so are there infinite forms of embodied process, and all of this happens in a body, resulting in musicking. So understanding it is integral, absolutely vital. Let's keep a couple of questions in mind as we proceed: how does the body mediate sound, and our sound experience? What basic precursors in the body influence our perception of sound? To what extent do we understand the body as a **context** which has been present for all musicking (just like acoustical space), and in conversation with it, since the genesis of human musicking?

The importance of reclaiming the body, and the embodied perspective in academia, has been unveiled across many disciplines in the 21st century; it has been pioneered in fields as disparate as theoretical biology (Varela, Thompson, and Rosch) and linguistics (Lakoff and Johnson); but the conversation is still in its infant stages. This despite the fact that not just music, but all of human experiencing is thoroughly an embodied art: a process whose resultants are in turn a resultant of the processes of the body in its unfolding interactivity. What is being experienced is what we are experiencing with: the implicate principle is seen to exogenate at various levels as we proceed.

There has sometimes been a sense that the actual **product** of music, the ephemeral and changing vibratory patterns, must be analyzed and understood on their

own, that they must be frozen and objectified, just as metered temporality freezes and objectifies unfolding process in music; that the body does not come into play as it does in the visual arts, where it is depicted explicitly so frequently, and therefore has been ascribed more central importance. This is not surprising, in our modern paradigm of objectification.

Of course the body is implicitly present (in the observer) of the visual arts, as well; thus our understanding of her unfolding processes will apply across disciplines. But contextualized simply, this entire perspective of the body that has framed prior discourse (or lack thereof; for it is a perspective of denial: the body is there in bas relief) is inherently a product of the incessant habit of objectification, which has maligned so often the dignity of the feminine, mechanized the continuum of the body, commoditized nature, etc.

It is absolutely essential that we reclaim the body in music; the body is not just present for all acts of musicking, it is at the very center of musical creation and musical experience construction. Our listening, specifically, is in constant and highly intricate conversation with all of the processes of the body. Further, this ephemeral nature of vibratory patterns is in turn intimately tied to the nature of the body, as well as consciousness as it animates it: both are ever changing landscapes, dynamical systems in motion, activity based inquiries, occurring in the flux of processual

unfoldment. We must begin to see the body as a complex dynamical system¹⁷⁵, with all of the properties of other complex dynamical systems explored in this paper - musicking, nature, consciousness – which is available to help us understand its interactivity with them if we are available to understand it as an instrument rigorously.

As we begin to understand the body as a complex dynamical system, and uncover its generative activities, we come to realize that these generative activities become reflected in all of our musicking, and **its** generative qualities; that there is no line of separation. Furthermore, we must understand that there is a deeper context that the body provides than has hitherto been explored.

If we inquire into the sonic environment of the body, we see the acoustic ecology of microsounds as a background against which all musicking has been experienced throughout all of time; in complex interactive conversation. While their influence may seem miniscule, even dismissible at first, billions of recursions in a CDS (the body) including those microsounds (in further conversation with culture, nature, etc.) prove otherwise.

As Lorenz has described, when it comes to complex dynamical systems, the butterfly effect cannot be underestimated as it amplifies initial conditions through the billions of recursion of a system (Lorenz); billions is only an approximation that

¹⁷⁵ Synonymous with an interactive system; a sensor/creator in relationship to the environment (as many theorists have proposed).

points towards the infinitude of interactivity in any living system; it allows us to simplify its visualization into a mathematical reference. From what we've established above, the suggestion that all rhythms are abstractions of the heartbeat is a rather simple and logical one. We can go beyond this and postulate that the entire **in vitro** sonic experience provides initial conditions for the complex dynamical system of the organism's experience of sound, that are then amplified throughout the life of said organism.

The microsounds of the body are a context, a living environment of sound that all musicking has been in relationship to; innumerable musical elements can be explored not just as abstractions of these, but even further **the sublingual** **omnipresence of these sounds constitutes a sonic framework at the center of all musicking experiences that they are in intimate conversation with throughout the adult life of the organism.** Thus to engage this reality is essential in arriving at a comprehensive understanding of the **process** of music as it unfolds from the implicate, through **the instrument,** at the most subtle level. Explicate instruments (highly sensitive contact microphones, etc.) may aid in this inquiry, but only the implicate instrument can fully address it.

So the heartbeat, having been one of the initial seeds of this process, is already seen to have an integral impact. Beyond the heartbeat, the body has a rich internal sonic environment with infinite diversity and interactivity (often overlooked), just as in nature. A veritable complex dynamical system. All of which the **in vitro** fetus would have been exposed to, and which continue with us sublingually as we continue

as adult humans. Like the heartbeat, these microsounds would have catalyzed associative reference points, experiential contexts, attractors in the system of sonic perception which would in turn continue to interact with the organism's listening, internal enactment, and externalized action in dynamic recursion for the rest of their life unfoldment.

What does it mean for these microsounds to form a context? Does it mean that internal intervallic relationships between the microsounds of various tissue will elicit and reinforce stronger associations with sounds that allude to those relationships in some manner? Does it mean that the aggregation of variegated microsounds in proximity to the ear (like the complex environment of the brain, as an obvious example) would create a sort of transforming high frequency cluster landscape against which various pitch relationships, as well as aggregations, are contextualized, apperceptively throughout the life of the organism? Does it mean that internal cyclicities beyond those of the heartbeat further act as a generative seed for our apperception of rhythm, and thus merit inquiry?

All of these are meritorious inquiries. While some answers may lie in the domain of atomized knowledge, I believe the revelations in the domain of embodied inquiry are far richer. The biangulatory approach, as well as the metaphorical dialectic established, help us to contextualize this data.

Varela has advocated a neuro-phenomenological approach (Varela) that “[marries]...modern cognitive science and a disciplined approach to human experience.” A composer is an expert in the interactivity of unfolding process, and

this is always in the presence of a body. One will note that my methodological approaches satisfy the first two points of Varelas' application of the “phenomenological reduction” patently (Varela), and the last two implicitly. The inculcation of the bioresonant laboratory of direct experience and the ontological gems it reveals demands only that we discard our limited notions of what knowledge, intelligence, creativity, etc. are and are capable of being. The reports of the dynamical system from within the system, when contrasted with scientific data from “the outside”, implicates whole new domains of knowledge:

“It was Husserl's hope, and still the basic inspiration behind phenomenological research, that a true science of experience would be gradually established which could not only stand on equal footing to the natural sciences, but in fact would give them needed ground, for all knowledge emerges from our lives experience. (Varela)

I will offer two simple principles to be applied across the board in this affair of neuro-phenomenological inquiry we are engaging in this text: 1) The implicate principle (as mentioned before): that what is looking (or hearing) out, is what we are looking (or hearing) with. And 2) The *a posteriori* principle: to recognize that our *a priori* assumptions will always masquerade as the *a posteriori*; thus no rigor is possible in the experiential inquiry without sincerity enough to penetrate even that which **appears** implicit on the surface. In other words, the *a posteriori* is always beyond what is apparent. We will find, time and time again, that what we assumed to be true will open up into a completely new domain of complexity. We can either get excited about this, or avoid it in pursuit of recursion of our mimetic assumptions.

Our perspective through this instrument (as through any instrument), is akin to looking at the night sky through a telescope. From within the dynamical system (through the telescope) we see the changing configuration of constellations that we've come to know so well. If we were to zoom out and look at our galaxy from outside of the system, we would see the geometry of the dynamical system as it is, the three dimensional shape of the milky way.

This analogy may help us orient as to how to contextualize the data garnered in the implicate laboratory, which is another name for the SLODE. When we say that there are isomorphic relationships throughout systems, the expectancy of the atomized mind is that they will be self-same in nature, and in a one-to-one relationship. However, we know from fractal analysis that they are in fact self-similar in nature, and this is going to be crucial to our uncovering in the chapter on CDS'. This analogy (of observing the night sky through a telescope) is an illustration of the implicate principle. We want to begin to notice the correlations between the purview from outside of the system, and within it; then we will understand these isomorphic relationships, and the underlying generative activities they exogenate, more rigorously, as well as what we can glean from them, from a purview that is coherent.

We say too often that we cannot trust the empirical because it does not provide us with the one-to-one data we are used to over-valuing and preferencing; it is rather of the nature of the data of the telescope in relation to the actual geometry of the cosmos. The telescope, and every other scientific instrument, is just as limited as

the instrument of our body. Each has infinite domains of complexity outside of their purview.

Furthermore, do we forget that all of our inquiry into the cosmos (in terms of the “linear” data we have come to preference) began with the telescope, began with the microscope, began with the FFT spectrum analyzer, the EEG, etc.; that it began with empirical inquiry through the aid of an instrument as an extension of the body? Understanding the process out of which we extrapolate knowledge from instruments as extensions of our embodied unfolding process has implications that go way beyond music. As a composer, I am an expert in the art of coherency facilitation through processual unfoldment, the precise knowledge base we need to build a bridge between intellection and empiricism. My methodology is one of precision, as well as breadth; this is not due to any special quality inside of me, but rather in my willingness to re-engage contact with the implicate: in life, myself, in the continuum/flux.

Later on in this paper, we will inquire more deeply into the **internal acoustic** ecology of the body, and the role this plays in the generative processes we are exploring. For the time being, I want us to keep the body in the back of our minds as a **fundamental context** of music ever-present; we endeavor here to include all of the inter-nested orders which are involved with, and influence the activity of musicking, and exclude none: thus it is a theory of inclusion and self-evidence. We must, as encouraged earlier, keep these questions open ended, not as avenues to be finalized

and concluded, but as open inquiries to unfold and unveil **themselves**. Put simply, the bodies presence is **implicit** in music, and so we must include it.

The body is the implicate instrument. Consciousness is the implicate instrument. Listening is the implicate instrument. These three metaphors dissolve into each other as one unfolding activity, unless teleological interventions filibuster the process somewhere along the way. Our inquiry is to penetrate beyond this cul-de-sac, and apprehend that which underlies it.

Musicking scholarship has the unique opportunity to understand and explore the **innermost workings of the body**: the body is itself, like music, a complex system in constant transformation and flux, unfolding in various state transformations. In so doing, we vanguard new understandings of process in this realm, that of CDS' in extraordinarily complex interactivity, beyond anything scientific instruments can apprehend. Small's discussion (Small) tracks the unfoldment of the interactivity of complex dynamical systems called "concert hall", "concert goer", etc.: fundamentally humans and culture, or rather, humans **in** culture. Unfolding within it. We can expand this to include humans **in** nature, humans **in** psychology, as well as all of the interpenetrating relationships we can begin to uncover, including culture **in** humans, or culture **in a body, etc.**

Listening occurs in complex conversation with cultural conditioning, body states, personal preference, identity, and a myriad of other processes largely unconscious in the average body. Thus they either influence the music these bodies make unconsciously (when denied), or those actors implied by the body bring their

embodied process to consciousness and take the reins, so to speak, over that which is already in motion and producing the resultants they take credit for as creative agents. I think any competent instrumentalist has, through their self-discipline, confronted this territory intrinsically and will recognize it in their own experience: in it lies the difference between mechanical operation and *rasa*, or soul, in performance. The question is: what is the totality of this inquiry, when extended to the entire musical process?

The body is an integral context for the processes and cycles of sound, first confronted in the womb; forming an acoustic context by which all subsequent musicking, and the neurobiological processes involved, come into intimate conversation with, both pre- and post- psychological process. As we explore the metaphor of direct experience and our mediations thereof, I would like the reader to consider this as analogous to body states; to the ways that we abstract artificial meaning onto the raw processes of the body, which did not come branded with inscriptions of “fear”, “pleasure”, and other abstractions thereof. How we arrived at the exteriorized experience is a rather intricate affair; we must not, in our experiential inquiry, make of experience a fetish to the degree that we do not uncover our own *a priori* assumptions.

The competent musician unveils these processes and cultivates the capacity to create in conversation with them, rather than allowing that conversation to be silenced **which is already going on**. The body, like the feminine, has been silenced too habitually in Western culture. Further, the body in its constant state of transformation

reflects and mirrors the flux of the processes of nature, and vibratory patterns (musicking) themselves. Only through its direct engagement may we remain on the leading edge of musicking, rather than become mechanical instruments of reiteration, as well as cultural machinations of control. We will see that when it comes to the body, we either synchronize with her processes, or are crippled by our denial of such; much of the lowest common denominator consumerist musicking environment is predicated upon this understanding, and the possibility of entrapment it allows for: it exploits this implicitly in the body of the listener. Those of us who wish to foster something of more sophistication and cultural value must match and surpass this activity historically, in order to counteract it.

Thus the ‘outing’ of **embodied process** and the body, and the possibility of **embodied listening**, are crucial. Embodied listening is implicate listening; we are always listening with our entire body, but this activity itself is mediated through various psychological processes that make it appear otherwise. Once again the implicate principle applies. The recursive psychological mediations that we will we find (through attentional inquiries) to be a sort of entanglement with media, tradition, notions of beauty and art, etc. inhibit direct experience, creativity, and the autonomy of consciousness, as well as the free expression of the body; but only to the degree that we participate in them. The ways that we engage them, our **interactivity** with them, or lack thereof, will integrally influence what we create. Thus I believe that there is an inherent **response-ability** for musicians to process, confront, and engage the body as an **activity** (not a noun), certainly intellectually, explicate, outwardly,

but implicitly as well. Through embodied process. And as we are all in the midst of an embodied process in regards to music (i.e. we are all musicians) already the only injunction is to bring to light what has hitherto been hidden: to become radically honest, certainly intellectually, but somatically, as well.

We must contextualize all musical processes within the body, not as an abstract concept of 'body', but rather that which is discovered in the flux/continuum. In terms of the body as a complex dynamical system, we have a unique analysis here: systems are not only always in flux, but this flux, and its entropic perturbations, leads to their self-organization, according to Von Foerster (Von Foerster 31–50). He introduced the concept of self-organization, and the principle of 'order from noise', in 1960. In this view, systems explore various 'states' in their 'state space' via self-organizing processes that move fluidly between order and entropy in a co-informing and co-arising relationship that inevitably leads to higher orders of coherence, previously enfolded and seemingly 'hidden' in the system.¹⁷⁶ What looked like indeterminacy, is actually the unfoldment of these enfolded orders, organizational complexity our purview cannot perceive¹⁷⁷. The human body, and the embodied process, can be usefully conceptualized via this theory: bodies are self-organizing systems in which we explore various 'states' in our 'state space'; in music, the

¹⁷⁶ This is analogous to self-equilibration as previously discussed in regards to intelligence.

¹⁷⁷ Like the 3-dimensional geometry of the milky way.

creation of music, as well as the experiencing of it, reflects this. It is an exegesis of it. Our explorations of complex dynamical systems will unfold this metaphor further, providing a forum for contextualizing our understanding of this embodied process more ‘objectively’. Some systems theorists have further suggested the model of systems as ‘sensors’ and ‘creators’, and importantly that they communicate on the quantum level. This clearly applies to the body, as well. From this perspective, for example, Small’s analysis (Small) can be expanded to include quantum communication between systems in their process of enactment. A few examples of this might include: performer within tradition, tradition within performer, performer within listener, listener within performer, and tradition (A) within tradition (B) as dyadic analysis’; performer in listener in tradition, nature in listener in composer, as triadic analysis’, ad infinitum where what is understood to be occurring is a complex, multi-dimensional communicative process on a level prior to our mediations of it (not the exterior objectification we complicitly participate in), and fundamentally one of the nature of inter-nested orders, and not hierarchy.

Embodied process is synonymous with the **bioresonant laboratory of direct experience**, a feedback laboratory in which we garner knowledge and information **directly**, unabstracted, through unfolding process. Furthermore, in the process of engagement with this laboratory with rigor and sincerity, we have the potential to gain access to information prior to human mediation and interpretation, completely different in order from that preferenced in the world of conceptual ideation, being more akin to the information of the very life processes themselves, or quantum

information¹⁷⁸. They thus unfold within these more fundamental processes, not our own. The value of this is difficult to underestimate, as it is generalization, abstraction, and reification which has caused us to become so separate from nature's processes that we are in danger of destroying her, and ourselves.

Exploration in the SLODE constitutes the very activity of musicking; all performance, composition, and listening has been germinated, tested, executed, and enjoyed therein, in our 'state space'. I believe it is absolutely essential that we understand this laboratory, how our attention influences it, and thus engage it more directly, in order to bring Western art music to a new level of competence that matches the social challenges in the larger cultural milieu, as well as the orders of coherence potential available to its 'poised' listening/attention. Hence deep listening, embodied process, and the direct experience as inquiries stressed so heavily in this paper.

The **direct** element is absolutely essential to unpack; it refers to approaching and coming into more and more intimate relationship with experience prior to human mediations; in sound, sound as it is. Not only must the **role** of the body be reclaimed, but music's place as an **embodied art**. All musicking activity is already occurring on

¹⁷⁸ Our entire inquiry is in the praxis of our inquiry into the interactivity between this and our frames, and the possibility of animation of said process coming from enfolded orders of the system, and not the self-same attractor inculcated *into* the system from its own expression across systems.

this stage: instrumentalists cultivate their performative skill through repeated application of action, developing muscle memory and listening competence by which to execute scores and generate interpretation, all within a body.

Composers engage in a complex recursive process of listening in relationship to an instrument, or an abstract idea, or an internal enactment, or an exterior sound, that includes, as I will argue, a deeper process of intrinsic enactment apperception and coherency apperception; all of this is an embodied process, as is a composer's direct personal work/contact with instrumentalists and listeners.

The listeners experience is always embodied, even if their instructions are to sit and be still, this is in and of itself an embodied choice, and one which we must examine with a severely critical eye, as it transmits very specific generative qualities that have gone unquestioned. Beyond emotive and other chemical responses that occur as part of the listening process, the social ritual of musicking places the listener in roles on a spectrum from passive to active that then contextualize that experience within the embodied experience of musical apperception as an exogenation of this. Too often we are unconscious (a) of this implicit interactivity, and in so doing enact rituals that we might not otherwise if we understood their implications; our listeners have literally been put to sleep, and we must wake them up.

Ear training (which Pauline Oliveros has pointed out is actually **listening** training; or rather, entraining to a culturally specific set of algorithms in regards to listening) is a classic example of **embodied conditioning**, an approach to using this embodied laboratory that is fundamentally aimed at **conditioning and manipulating**

the listening faculty into a specific desired experience set (a larger activity which we must reconsider deeply). It is reflected in disparate musicking activities beyond ear training, across the entire oeuvre; it is further mirrored (as mentioned above) in the activities of media forces in the culture.

As with all of our cognitive processes (to reiterate) I believe that listening has been enacted in a fundamentally manipulative way up to this point in cultural history.¹⁷⁹ There are good reasons for this evolutionarily that we will explore; there are also good reasons why we are on the brink of an utter transformation of this, a cognitive inversion which facilitates movement into a higher order of coherence potential; a movement which this paper itself illustrates, advocates, as well as facilitates. What happens when we cease to musick from a perspective of needing to condition and control the consciousness of the listening faculty, either of ourselves or our listener? What orders of activity open up which seemed impossible to explore previously? This fundamental exploration of the unknown is in turn intimately related to indeterminacy, deep listening, and quantum reality.

In Western art music, the listener has been relegated mostly to a passive role; music is done to them while they sit politely in a chair. Their experience is manufactured for them while they check out and take a vacation. This would seem

¹⁷⁹ From the viewpoint of consciousness; this has an intimate relationship to Alva Noë's notion of action in perception, as well will see soon in our neurobiological analysis.

to be true, that the composer and performer are entirely in control of the listener's experience. This is an example of a fictional absolute based upon the illusion of the objective. The principle of **listener as composer** shatters this illusion and invites us to reclaim the active, vital quality of the listener, and be responsive to its cultivation as a continuum, rather than as an objectification.

This obviously points further to the value of reclaiming participatory culture, as many have asserted already. Much of the societal functions of musicking, such as those embodied by conviviality, dance, participatory engagement – are not served adequately or at all by the passive model; I believe participation in musicking is inseparable from its value, as well as value-formation as a process in general, and thus must be addressed within these contexts.

The above can be achieved in a number of ways: one of these is the breakdown of the expert mentality and the subsequent artificial social division which is endemic of the self-same attractor. Participatory and interactive art facilitate this explicitly. In fact, I believe that participatory and interactive art represents a further emergence of the realization of nature's processes in her manner of operation, an explicate emergence of the enfolded orders and implicit processes of the interactivity of disparate activities (like human beings), or the revelation of meta-activities (analogous to meta-listening). They have the power to be open systems explicitly rather than implicitly, like evolutionarily stable morphogenetic forms, engaging the forward movement from complex dynamical systems as separate from nature (as closed systems) to complex dynamical systems embedded within and inseparable

from nature, that further mirrors the alluded to movement in our culture at large. In short, all systems are embedded within the open system.

In the end, it is the actual vibratory processes and quantum communication between systems that occur, not our psychological narrative and its self-valorization. I agree with quantum complexity and systems theorists who describe systems as sensors and creators, that this is a good starting model; from there we evolve into an ecological model, and from there to the territory beyond those metaphors. I believe that a competently embodied process can actually get at the implicate order in sound, and that this is one of the most exciting possibilities of our times, and one which intellection alone cannot explicitly get at; it can only get at it through metaphor.

Fifth Attentional Inquiry

1) (5-10 minutes) Pay attention to your experience; take an inventory of all of the elements within it for several minutes. Notice them without ascribing any meaning to them. Answer the question: “Is your experience comprised of 100% consciousness, or not?” using the implicate methodology as outlined so far (refer to p. 94 as a reference if needed).

2) (5-10 minutes) Now repeat the above with the question: “Is your experience comprised of 100% vibration, or not?”

Neurobiology

In the interest of unveiling a rigorous understanding of consciousness and musicking, we will approach them from many different angles: from that of neurobiology, complex dynamical systems, musical process, cultural evolution, physics; dare I say that we will attempt to omniangulate the subject at hand? That our metaphor-competent dialectic (and our discussion of the implicate order) will in turn make order out of this bold assertion in time? Underneath it all we must hold an essential inquiry tacit – are there isomorphism's between the activity of vibration and consciousness? And also: are there isomorphism's across all dynamical systems that we can observe from our purview? We do not need to answer this question right now; once again please hold it lightly in the back of your awareness, and it will address itself.

The explication of the theoretical, scientific side of this paper will begin with some sound observations on recent neurobiological findings. As we proceed, we must keep in mind (and this will help us to contextualize the data from our embodied attentional exercises) that we are observing the activity of the system from within the system; this is the implicate principle once again, extended into the realm of systems, neurobiology, etc. In other words, we must gradually expand it from our observations of its unfoldment within our embodied process to every realm of intellection and life processes, in order to garner the wisdom therein. This theme will be returned to over

and over again; like a tree that continues to bear fruit, the implicate principle will have far-reaching impact in every arena of our investigation.

When it comes to *a posteriori*, unreducible knowledge, the neurobiology and the body is the best instrument we have, and this may be applied to an understanding of dynamical systems, as well as music. We can explore each from within, and from without, in the process of which we gather implicit knowledge that supports the explicit knowledge garnered by EEG's, MRI's, and other exterior examinations of the neurobiology as a CDS. This can then be extended into coastlines, tree branch aggregation, ecologies, and the morphologies of all natural systems. In this light, I would like to begin exploring systems through the neurobiology, and then open up a broader discussion of their generative qualities in a few chapters that elucidates how these are interlinked with musicking.

I find Ramachandran and Hirstein's recent interpretations of art, neurobiology, and how we arrive at their value useful (Ramachandran and Hirstein). Their focus is in the domain of the visual arts, but their theories apply across the board, including in the realm of musicking. They represent one of the best metaphors we have available at this time (until new research reveals a new layer, and that becomes our best metaphor, etc. as the concourse of knowledge proceeds, as it inevitably does).

Their theory among other things posits an inherent quality of hyperabstraction intrinsic to neural activity, and the value we assign to art; that the neurobiological

system recognizes permutations of extant ‘content’¹⁸⁰ and experiences this as intrinsically pleasurable in a fashion integral to the human organism, and how it relates to the world. We will call this, for the sake of brevity, the ‘hyperabstractive theory’.

I will describe the ‘hyperabstractive theory’ in detail; it provides a comprehensive starting place from which to ferment a discussion. The author's interpretations only fail to penetrate the deeper implications of consciousness and art beyond the reified frame of mediative process that artists are privileged to confront more explicitly in their line of work, and so are understandable, even if regrettable. In addition, Ramachandran and Hirstein suggest an interpretation of *rasa* in “The Science of Art” which embodies these mediative *a priori* assumptions, and which will serve as a counterpole to my explanation of that phenomenon in a later chapter. They in turn illustrate how our lack of processual awareness is inhibiting our intellectual rigor in the sciences. So it will be useful for us to go through their theory in some detail. The ‘hyperabstractive theory’ is basically an interpretation of ‘the peak shift effect’:

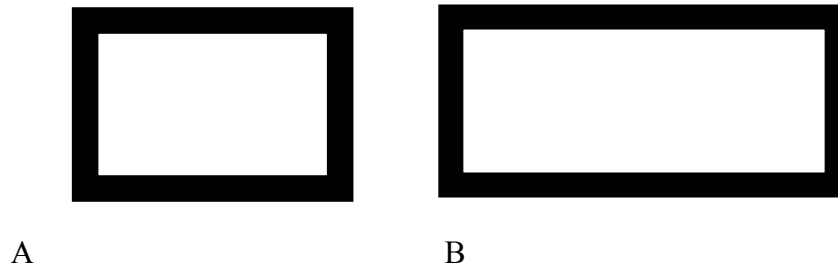
¹⁸⁰ ‘Content’ here refers to that of the raw neurological substrate, and is put in quotes to highlight the hyperbole of scientific interpretations. Logically it is permutation of the neural substrate as opposed to psychological, conceptual, and other ‘content’ abstracted from that, but we must begin with the interpretations of Ramachandran and Hirstein first, and go from there, as what is simple is sometimes obfuscated along the way, and then must be simplified again.

The Seagull mother has a long beak with a conspicuous red dot on the end of it, which the infant bird pecks at instinctively, causing the mother to feed it with partially regurgitated food. In research by Tinberger (Ramachandran and Hirstein), a long stick with a red dot on it was proffered to the infant bird, and it instinctively pecked at it, as well. This behavior was exhibited from the moment it emerged from the womb; hence it is understood to be genetic and not learned behavior.

The researcher then proffered a long stick with three red dots on it. The infant birds went wild, pecking at the three dots with a vigor not previously displayed. This implied that the hyperabstraction of the single dot, the 3 dots, was experienced as red dot and then some, and further that this elicited a unique pleasure embodied by the wild response of the chicks. What is the nature of this pleasure? How does it differ from, and how is it similar to, the traditional pavlovian response as we conceive of it? The birds responded more strongly to the three dots than to the evolutionarily conditioned single dot, causing us to question our basic assumptions about conditioning.

In research with mice, a similar phenomenon has been observed: a rectangular symbol (such as A in Fig. 1) is repeatedly showed to mice in association with feeding, forming a strong pavlovian association. These mice are given the option of selecting either a square or this rectangle; they repeatedly choose the rectangle as they have been conditioned to preference it (based upon the association with feeding).

Fig. 1:



Next the researchers present both A and B to the mice; the original rectangular and one ‘exaggeratedly’ long. The mice surprisingly selected B consistently, not A, the symbol they were conditioned to. As with the seagulls, the observation is that, just as the birds began to recognize dot and then some, the mice have begun to recognize rectangle and then some, or what Ramachandran and Hirstein refer to as a hyperabstraction of the rectangle. They argue that the mice are attracted to the ‘rectangularity’ (Ramachandran and Hirstein) which B is an improvement of. Once again, a unique pleasure seems to be elicited, strong enough to supplant pavlovian conditioning.

This phenomenon is called the peak shift effect. The author's interpretation is that B is more rectangle than A, the original, and the brain simultaneously cognizes this, and is attracted to it. There is something intrinsic about this; at least that's how the theory goes. B is argued to be a hyperabstraction of A, and the theory proceeds to suggest that we find this same hyper-abstractive activity at play in the observer's neurobiology when they come into interactivity with visual art; that caricature, the distortions of faces in Picasso, etc. are each examples of this. In each case, a hyperabstraction of something familiar or known elicits a pleasurable response. Now

the question of what is being hyperabstracted has not been addressed fully; the study is constrained to reveal a potential hyperabstractive connection between visually recognizable objects, and is generally interpreted in a similarly atomized fashion. It cannot be inferred from the research that the faculty is limited to the domain observed, and this has too often been done; this is important.

I do however believe that it is pointing to a very real and significant phenomenon. Moving forward, we can see this hyperabstractive faculty at play in music in multiple significant ways. Messiaens' transformations of birdsong, as an initial example, suggests a strong connection. The listener would naturally have prior experience with birdsong that the music is presumably hyperabstracting, and this could be associated with their attraction to the music, or pleasure in listening to it¹⁸¹. Creative filtration of found sound in various acousmatic music's could be argued to be eliciting a similar hyperabstractive quality; in both cases, the theory is that prior experience is being drawn upon as the generative source of the hyperabstraction (prior experience with birdsong, and the particular found sound, respectively).

We could spend an entire book illustrating this phenomenon in music; if the hyperabstractive theory is true, the correlations between its activity and that of music are virtually an endless ground for exploration. It is explicitly embodied in the phenomenon of theme and variation, a fact that should be immediately obvious. And,

¹⁸¹ One can observe a similar hyperabstractive quality at play on multiple levels in *Daphnis et Chloe*, from rehearsal #155 to #158, exhibited in various biomimetic fashions (Ravel).

we see another phenomenon here, that of presentation: something new is presented to the neurobiology (theme), and then this is hyperabstracted in various ways (variation). Now one could even argue that there is inherently an isomorphism between the geometries in the neurology, and in the music, or else it would not be bioresonant with said neurology. In which case, it is arguable that there are no novel themes (all are variations on, or hyperabstractions of, natural geometries), and the hyperabstractive faculty is operating at a deeper level than superficial ontological objects constrain to. And even those who do not believe in an “underlying generative activity” will argue that seemingly novel themes are abstracted from nature, or are subtly quotations of some previous music, which itself is abstracted from nature. So there begins to be some grey area as to what is novel, and what is mimesis, and this becomes highly significant.

Important right now is that the presentation of theme initiates the listener into a conversation that then occurs in dynamical space, processually unfolded through variation, and that this is permutational and recursive in nature (and so isomorphic to the hyperabstractive faculty itself, the branching networks of neurology, etc.). This will be seen to be mirrored in the action-contingent elements of mirror neuron research, and an essential principle of human cognition. In *Science, Order, and Creativity* (which was written before the discovery of mirror-neurons), David Bohm describes a “communicable concept” (Bohm and Peat 24) which is further integrally linked to these different phenomenon. He shares a story about Helen Keller, who was deaf and blind and had absolutely no communication with the world outside. She was,

as many of us will recall, tutored by Anne Sullivan, who wished to help her communicate with the world in some fashion.

Sullivan realized that Keller didn't even have an understanding that communication was possible; she didn't even have the primitive of communication. Her experience had never presented her anything that would allude to this possibility; and so, for her, something which most of us take for granted (communication) for all intents and purposes did not exist.

Sullivan realized this; she began to trace the word "water" on Keller's hand every time they drank water together. She began to do this with several other ordinary activities, until Keller got the communicable concept; she understood that there was an associative link between the activity of Sullivan tracing on her hand, and the activity presented consistently along with it. She got the communicable concept of communication itself; her neurobiology began to interlink the geometries of what was being traced on her hand with the geometries of activities performed, and simultaneously interlink the geometries of the neural matrices associated with these activities. This realization initiated her into the world of communication, and her entire educational and professional career proceeded from there.

A musical theme is a sort of communicable concept, as well. Just as the communicable concept initiated Keller into a whole new world of possibilities, the presentation of a musical theme initiates the listener into a whole new world of permutational possibilities in the form of the piece's processual unfoldment. This unfoldment transmits intrinsically certain coherency potentials that are mirrored in the

geometries. That this unfoldment is in turn isomorphic to the activity of the hyperabstractive faculty is apparent, and significant. The metaphor of variation as geometric and processual unfoldment of theme naturally alludes to higher levels of organization, coherence, and complexity in life systems and the body, and begins to reveal these bioresonant mirrors as they echo through each.

In the case of the seagull chick, a simple hyperabstraction from one red dot to three red dots was observed; this is likened to the first few inches of a great branch that extends into many branches, twigs, and leaves in unfolding inter-nested layers, if one wishes to make an analogy to the degree of complexity at play with, for example, a Webern quartet, where we have multiple layers of recursion in a hyperabstractive system that have unfolded throughout an individual's life, and culminate in a musical experience¹⁸². We must understand this entire unfoldment (from a biangulation of musical system/listener system) if we are to understand musicking; at which point we begin to approach an understanding of listening, which encapsulates a level of interactivity which includes all. So we are talking about the very seeds of generative activity; we are taking small steps towards approaching an understanding of the whole, with the question held lightly in mind of what isomorphisms exist across all systems, and what the significance of this is.

¹⁸² Presumably they have learned experience with natural sounds, as well as those of tonality that preceded their experience with Webern, and are part of a much more complex network.

Another way of talking about this is in terms of primitives; similar to in the coding domain, “face” may be a primitive that is hyperabstracted upon, as may a theme, a birdsong, the sound of a train, even conceptual objects like “freedom”, etc. We can start to look at what sort of primitives various avante-garde movements have exogenated, what communicable concepts they metaphorically drew upon people's hands. To a certain degree these may be described, and to a certain degree, they may not, as the activity is prior to the words, and the words are a reduction of it. In my own analysis, vibrational coherence potentials exist underneath every communicable concept. In other words, primitives are a metaphor for a much more fundamental activity; even sound is a metaphor for a much more fundamental vibratory unfoldment.

Did Schoenberg's music, or Bach's, or Steve Reich's, draw a metaphorical communicable concept on people's hands? If so, how much of this could be described with conventional languaging? What new coherence potentials did each unveil? What new primitives did they hack into our mainframe, so to speak? How can we use this understanding to facilitate a thriving new music culture today?

It is important, when using a metaphor like communicable concept, to emphasize that this does not imply exclusively the reified concepts of “water” or “building”; that the substrate of this neurobiologically is much more active and dynamic (and indeterminate) than these reductions imply. So we use “communicable concept” and “primitives” as functional metaphors to arrive at a basic principle: the coherence unfoldment unveiled and pointed at by the hyperabstractive activity (or

some permutational geometry) of the musical object, or the conceptual object¹⁸³, reveals the underlying coherence activity of the system itself more than it does these top-down reductions, and this is related to through bodily engagement.

In some sense, the music is a metaphor for this coherence unfoldment above all else, even more intimately than it is a metaphor within the constraints of the syntactical languaging of musical tradition. This points towards higher levels of organization within the system, and consequently within the organism: a potential which is enfolded in the system itself, and which the organism, and all systems, move naturally towards (Prigogine, Nicolls) (Jantsch). In the end, this is rooted in the neural substrate, prior to our precious abstracted reifications, and even deeper than that, it is rooted in raw vibratory activity; so we must talk about activity, not nouns, and allow our metaphors to peel themselves back, lest we become lost in them, in this unfoldment.

This is further integral to the value we ascribe to art and music. Art of many different varieties exhibits metaphor, theme and variation, etc.: they naturally allude to the activity of unfoldment (which is embodied in the hyperabstractive theory) in some fashion. In terms of the avante-garde, this is why we must take active responsibility for the listening activity of our audience. You have to know there to go there – this is a fundamental principle of cognition! We must recognize that new

¹⁸³ One can see rather quickly the degree to which we are working in the realm of endemic reductions.

music intrinsically demands that the listener absorb a metaphorical communicable concept, and enter into a new domain of coherency unfoldment, as well as, at times, idiosyncratic syntactical languaging. Thus it stands to reason that the depth our tradition may penetrate is directly correlated to the degree to which we have prepared a listening public to “go there” with us. If we don't become the teachers of listening, our public will become too anesthetized to appreciate new music, and our tradition may fall off the map and become nothing more than museum archived past (as too many indigenous traditions have as a result of a colonial ethnographic methodology endemic of the same generative activities I critique in this text). We will ironically become subject to the resultants of the same colonial activity we instigated; we have colonialized ourselves as in to depreciate the living activity in favor of a self-valorized framework of reification and frozen activity, archiving— one which is not just conceptual, but enacted in the built perceptual universe we inhabit, and thus our social/political enactments, as well.

This is integrally linked to mirror neuron research, which has shown that the same neurobiological patterns shown to fire when an individual performs a sensorimotor action also fire when that individual observes the same action being performed by others (Gallese, et al. 1996) (Rizzolati. Et al. 1996) (Kohler et al. 2002) (Rizzolati and Sinigaglia 2008), suggesting that we enact what we observe on a sort

of internal stage¹⁸⁴, and that this aids us in coming into meaningful relation with it: it is integral to this process. However, we enact what we observe contingent upon prior experience; this has specifically been studied in music, where activity differentials observed in the brains of musicians and non-musicians listening to music (Bangert et. al. 2006) (Hadjidimitriou 2010) commensurate to previous musical experience illustrate this. It is referred to as action-contingent mirror neuron activity, and has led some researchers to unfortunately come to the conclusion that only trained musicians can fully appreciate complex music (because they are enacting it internally).

Action-contingent mirror neuron excitement points to the presentation of the communicable concept outlined in the Helen Keller story; it illustrates this in the domain of neurobiological unfoldment, and is further isomorphic to the presentation of theme in theme and variation music. In other words, we are beginning to see this hyperabstractive permutation, and fractal geometries throughout nature (and the systems of our body and consciousness) as commensurate. Furthermore, we have established a basic principle of cognition: you have to go there to know there.

However, the picture is much more subtle than this. It does not seem that complex enactment occurs only in highly trained musicians; in a recent study by

¹⁸⁴ ‘Internal stage’ is obviously an interpretation of this phenomenon, as what is observed is firing of sensorimotor pathways in absence of action, and this does not necessarily constitute an internal stage, as the enactivists have argued. This does not preclude it from being a useful metaphor for discussion.

Lahav et al., individuals with no prior musical experience were taught to play a simple piano piece over 5 days; on the 5th day, fMRI scans taken while listening to short excerpts of the piece they learned revealed action-network activity (exactly as had been observed in highly trained musicians), including in the Broca's area of the brain¹⁸⁵, that were not active while listening to music they had not played before.

The implications of this are critical; participatory music is theoretically tantamount to inviting audience members onto a stage that has never existed before inside their own bodies; how would we compose differently if we really understood this principle? Further research needs to focus on the limits of this activity, i.e. will a one hour interactive workshop teaching a musical process be enough to excite new syntactical pathways in the neuromorphic architecture? Will these exhibit on the same day? The next day? (implying sleep integration elements), etc.

In theme and variation, the composer literally introduces the listener to a new musical world via a theme that is then unfolded in processual space; the initial presentation theoretically elicits new wiring that is then hyperabstracted through variation, and is a mirror of the geometries in the musical unfoldment. No matter what the action-contingent alignment of the listener is, something in their neural substrate is pattern cognizing activity in the music. I argue that this is intrinsically bioresonant; that since the same geometries exist in our bodies, they are recognized in

¹⁸⁵ This is significant because of the syntactic processing correlations of the Broca's area, which will be discussed more as we proceed.

the music, and that this is integral to the activity of our perception therein. It is the neurobiological apprehension of the self-similarity of fractal systems intrinsic. Like the mice and the Seagull, there is something pleasurable about this, something fundamental to our experience of art and music. Why is this?

I believe we are fundamentally wired as complex dynamical systems to move towards higher and higher degrees of coherence, higher and higher orders of organization. This is what systems do intrinsically, and we are complex dynamical systems, so it is quite logical. Now our cultural and psychological conditioning may have something to say about this unfoldment towards higher and higher organizational exogenations, and may influence how we mediate these coherency unfoldments, reorient them, etc. but I believe, as Prigogine does, that this self-organizing quality is inherent to natural systems in general. The brain and the body are thus both dynamical systems, moving towards higher and higher states of coherence in the absence of any other force impeding them.

And musicking and art can be understood as facilitating this process, which would pose a sound explanation for their perceived value. As the dynamical system is intrinsically seeking to self-organize, anything that facilitates could potentially be associated with a similar pleasure. Even the works of art don't in and of themselves move the biology into a state of higher synchrony (although they might) and coherency, the hyperabstractive faculty, and the activity of the MNS, are a sort of biomimetic mirror laboratory that can cognize coherency in systems; they further remind us of what we really are on the other side of the glass ceiling of our built

perceptual universe, and this is what elicits the pleasure associated with art: it ostensibly returns us to ourselves.

The exterior creative activity excites the inherent creative potential of the neurobiology for new wiring, and new levels of coherency unfoldment embodied by this wiring, which then exogenate throughout the system. I believe this fundamental quality is embodied by a great variety of music's, and Prigogine's work with dissipative structures points towards this explicitly: a self-organizing quality, a natural and fundamental movement towards higher and higher levels of coherence in all systems (consonance), which is facilitated by stages of entropic dissipation (dissonance), and which music embodies in multi-dimensional ways.

In the understanding of the brain and the body that this unearths, symbol and metaphor may be abstracted in the hyperabstractive domain mentioned before, but also abstract material: feeling states, abstract mental concepts, etc. i.e. anything which is found mirrored in the neural firing patterns in the neurobiology, as this is what is actually being hyperabstracted. This inevitably constitutes the entire spectrum of human experience, and beyond. What Ramachandran and Hirstein offer are very good starting principles; they even go on to suggest that our experience of tonality is rooted in a basic hyperabstraction of the harmonic series (Ramachandran and Hirstein), which I think is an excellent and useful observation. Many musical gestures can be seen as abstractions of sounds that would elicit either pleasure or excitement of another form in a human being: a sigh, a quiet country soundscape, birdsong, an etc. But the hyperabstraction of the harmonic series points more directly to the praxis I am

referring to, one which goes much deeper than top-level conceptual reification and its neighbors in the more apparent inter-nested orders of consciousness. In the end, the cognitive inversion is that hyperabstraction is a metaphor for the activity of the more fundamental vibratory processes occurring within the neural substrate, and not to be taken in reductive fashion.

Everyday activity is seen as eliciting simple associative patterns in the neural matrix of the brain that are basically predictable, whereas art and music elicit patterns that either embody or allude to higher levels of coherence in the system. They are not merely novel, they are isomorphic to these coherency potentials. A perspectival shift in the listener has been facilitated from reified objects and reiterated functionality, to interactivity, interconnectivity, and levels of integrality that transcend everyday experience. In the avante-garde, we are initiating the listener into the apperception of coherency itself: not into mere mimetic forms in an atomized pattern cognition database, but into their own implicit pattern cognition potential. Thus, when engaged competently, it is inherently liberating, and this is its unique power. It does not treat the listener as an automaton: it gives them the keys to the castle of their own self-organization.

As the brain and neurology operate on creating new interconnectivity, the above observations are no surprise; there is a too-often latent creative faculty inside the listener which is veiled by a culturally entrained passivity. It makes sense that activities that potentiate this latent faculty through heightened neural connectivity would be experienced as pleasurable and meaningful to the listener. In fact, it seems

the brain has infinite capacity for this sort of activity; in an article published out of UCLA, the following assertion is made:

"the emerging picture from the literature suggests that the mirror neuron system provides a neural substrate for representing infinite combinations of hierarchical structures, a computation that may underlie more general cognitive abilities. There is also evidence that perhaps this region may be the source of predictive models of upcoming events in sequential processing, a feature also common to language, music and action" (Molnar-Szakas et al.)

I call this activity intrinsic enactment apperception; I believe it is fundamental to all intelligence and creativity. The compositional process involves implicitly imagining (or apperceiving) integral interactivity with potential (virtual) audience members at the level of consciousness beforehand¹⁸⁶; in addition it involves integral interactivity with virtual (potential) performers and their instruments, the acoustical space, and rehearsal space beforehand (as well as the way the performers will interact with audience members, etc.). In other words, it involves an enormous amount of complexity in extrapolative enactment.

In addition, as soon as a composition is placed in the public domain with the intention of performance, a whole network of interactivity at the level of consciousness, public exposure, interactivity with tradition, etc. is initiated that

¹⁸⁶ But not imagining as in consciously imagining, it is more of an implicit, embodied imaginal process.

continues well beyond the performance. This is a mirror of the intrinsic enactment apperception beforehand, in addition to employing it in its unfoldment. As a composer engages in the process of finding and selecting performers, there is an implicit interactivity therein; there are initial correspondences, where the composer may be very specific in languaging in order to impart appropriate expectations, as well as to ‘vet’ potential performers: they want to establish if they are viable potential collaborators. Will they be reliable? Will they be mimetic automatons, or bring a new level of sensitivity and interpretation to the piece that the composer never could have imagined? How does one tell?

If there are auditions, there are multiple levels of interactivity during these: the social interactions in the audition (will a performer be selected because they are ‘cool’? Because they are ‘beautiful’, and the composer is attracted to them, and wants to spend time with them in exchange for a professional opportunity?), the acoustical space (is it the same, or different, from the potential performance space? Will a performer selected in one space translate to the other necessarily?), the difference between ‘audition performance’ and ‘actual performance’, etc. And the performance has not even occurred yet! One can see how quickly, at the level of consciousness, interactivity becomes infinite. Modeling such a system, just as modeling natural systems, becomes an enterprise requiring unique means, which we will address specifically in ‘complex dynamical systems’; in brief, however, if the composer were asked to address each complexity individually, consciously, it would be impossible. The intrinsic enactment apperception allows them to navigate complexity through

bioresonant apperception during this phase of realization, just as it did in the pre-performative phase.

I believe intrinsic enactment apperception occurs all of the time, not from conscious effort by the actor, but as a natural byproduct of one's vibrational isomorphisms with the field. It is the natural resultant of vibratory interactivity between nature and a neurobiology that has evolved to bioresonantly enact the iterative fractal geometries of nature internally, towards more coherent outward interactivity. It occurs just as automatically as the intrinsic activity of the brain, producing a field of possibilities simultaneously with the unfoldment of 'what is', as well as the 'actors' interactivity with it. From these possibilities the human 'selects' an unfoldment to realize as action based upon their own conditioning, past experience, predilection, alignment with the unknown, etc.¹⁸⁷. We will discuss this alignment more later, as it opens a whole rich arena: why do we choose the pathways we do?¹⁸⁸

¹⁸⁷ Here we have begun to establish how this relates to musical intelligence; as this unfolds, we will use this foundation to make a commentary upon all human intelligence. It should be immediately apparent, however, that the above faculty is at play in a CEO who is managing a group of people and their potential unfoldment, a mother who is caring after her child and its potential unfoldment, etc. that in fact it is the basic human capacitance for intelligence and navigating the world. This is a point we will unfold more rigorously as the paper moves forward.

¹⁸⁸ For the 'selection' does not occur on the level generally ascribed to conscious choice.

The degree to which a human uses this faculty - their competency in regards to it - depends upon how much they have cultivated it, like any other human capacitance. The fact that a practicing composer may have a high degree of competence capacitated, and that the normal person's intrinsic enactment apperception may for all intents and purposes be atrophied, does not imply any superiority in the former - rather it reveals a poverty in our educative and acculturative processes in regards to cultivating this capacitance in our global citizens. Creative education is one of the most important holes in our modern educational system, and this is evidence of this.

This also outlines a speculative understanding of the neurobiology's role in imagination. In terms of the MNS, the listener also enacts an imaginal process along with the composer and/or performer – contingent, to some degree, upon prior experience, and the unfoldment of the body. What is the relationship to notions of genius, as well as to the passive listener paradigm embodied by so much of modern musicking? Clearly we see a reflection of this in the very activity of the neural substrate itself, and in the isomorphic bioresonance we have begun to gradually tease out.

Mirror-neuron research has further unveiled that we cognize the intentionality of the actor observed, and specifically, intentionality through a motoric lens (Fogassi et. al "Parietal" 2005) (Fogassi et. al "Motor" 2005); in other words, we cognize and contextualize it through the bioresonant mirror of our body. This emphasizes the relevance of the embodied perspective through which musicological voices have

begun to unearth the unquestioned strictures of our *a priori* assumptions in regards to the listener/performer relationship (Schiavio), as well as the importance of reinforcing our competence with the embodied process as it unfolds in the continuum/flux.

Overy & Molnar-Szakacs' seminal study articulates it thus:

"musical sound is perceived not only in terms of the auditory signal, but also in terms of the intentional, hierarchically organized sequences of expressive motor acts behind the signal" (Molnar-Szakacs et al.).

I argue further that these sequences are actually inter-nested, and that if you inquire deeply enough (literally unfolding their enfolded information through your own embodied inquiry), you arrive at the artificiality of any line drawn between intentionality and non-intentionality, as well as actor or no-actor orienting this unfoldment. Just as the hyperabstractive activity veils deeper complexity at the level of systems when assumed to apply exclusively to ontological objects and other reified abstractions, so is the mirror neuron activity reduced when assumed to end at a fictionalized atomization of activity labeled "intention" or "hierarchy", respectively.

Instead you arrive at unfolding activity which, for lack of better signifiers by which to organize its reality, the human psychology labeled as 'actor', 'actor's intention', etc. And why do we assume hierarchical organization? We make the same assumption with the syntactical function of the Broca's area, and ignore the fact that this is revealing more about "the framer" than "the framed".

I argue throughout that cognitive processual unfoldment such as that illustrated above, and syntactical processing, are better visualized in an inter-nested model, and that nature, music, and the study of unfolding process illustrates this, and aids us in navigating it. **They illustrate that they are inter-nested in a processual action unfoldment isomorphic to the body systems and nature: thus the knowing of one's embodiment, and unfolding embodied process, is concomitant to the development of competency in knowing the multiplicity of potential unfoldment in 'other' bodies (which are both idiosyncratically different, as well as architecturally isomorphic, to one's own). We must predict a compositional outcome, and be prepared for anything.** This is further interposed with the human conception of hierarchy.

If we can construct a complex enactment of an act of musicking internally that includes all of the processes of musicking, as well as the intentionality of the actors involved, as well as theoretically the pre-musicking processes of the composer/performer/tradition, as a listener; and if, as a composer, with a heightened competence in this arena, I can theoretically hyperabstract this entire process into a complex extrapolation of possible enactments by listeners in disparate circumstances; then who's to say that sitting quietly in nature, listening to the wind, feeling the sun on my skin, my neurobiology is not capable of constructing an enactment of all of the processes of nature in similar fashion? From an explicate perspective, this seems impossible; the sheer amount of data is overwhelming. But we crossed that point of information overload probably three lines into this paragraph! If the organism is

understood to be a bioresonant, implicate, and apperceptive instrument, then this is understood to occur organically and is merely the natural resultant of one complex dynamical system (human) interrelated within another (nature), apperceiving the vibratory interactivity of such. Because its architectures are isomorphic to it, this complex activity is actually no problem to cognize, no more complex than the striking of a tuning fork. In other words, take the multiplicity of 'enactments' out of the above unfoldment as a case of atomized interactivity, and you just have unfolding vibrational process as dynamical interactivity: the larger purview of the milky way.

Is it so heretical to assert that this apperceptive competence, refined in a composer to a high degree, allows them to apperceive and compose as an instrument of enfolded orders of the system, even if the reified, unfolded, explicate, intellectual mind can never describe these? And that bolts from the blue, as well as indeterminate processes, are merely evidence of this from our unfolded purview, of the 'hidden variables' which are in turn mere evidence of that which is beyond our purview? And that embodied processes, deep listening, pedagogical listening, etc. are all means of fostering competence in these arenas, and in so doing, simultaneously liberating us from latent existential insecurities to extend the capacities of the entire musical milieu into a domain beyond the 5% of extrinsic brain activity¹⁸⁹ (in both cases whether we are talking about an individual or a tradition)?

¹⁸⁹ As a metaphor for consciousness.

In short, we must ask: what are the limits of this activity of the mirror neuron system? Are we to understand it as a computer, exemplified by explicate processes, or is it teaching us how a biological computer works, and humbling our teleomorphic limits? Is it an extension of our abstractive psychological processes, and thus limited by their assumed constraints? Or is it part and parcel of the activity of nature herself, and thus not limited at all, unless we constrain it ourselves through psychological interposition?

Dynamical Listening Observations

In the cyclicities of the central *ostinati* in *Rainbow in Curved Air* is implied a pulsing, living, breathing quality that is then organically hyperabstracted by Riley's improvisatory embellishments into what amounts to almost a quality of emanation, as in the emanation of light. Through the instrument of a human organism (ostensibly through Riley's embodied process), the unfoldment of a dynamical system produces something seemingly supra-organic; an apparent hyperbole – this further suggests a higher order of coherence emerging through the system – begging to be unveiled, bursting at the seams - both completely organic and simultaneously transcendent of terrestrial life and all of our limited associations of what “organic” does entail.

Sixth attentional inquiry

Please perform the following:

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds around you in your environment. Consciously drop expectations, judgments, and pre-conceptions about sound. Simply allow sound to be as it is. If the mind becomes distracted, whatever the distraction is, do not push it away or give it unnecessary attention; simply allow the distraction to be, as well: gently bring awareness back to sound, continuing to allow it to be as it is.

2) (5-10 minutes) Pay attention to the first strike of sound; sound at its first impact with your ears, prior to any further mediation. If the mind becomes distracted, or comes up with an answer or conclusion, or attempts to interpret this as ‘impossible’, do not push the distraction away or give it unnecessary attention. Allow it to be, and gently draw awareness back to the first strike of sound as an exercise.

Tabula Rasa

In order to unveil how sound becomes an experience, and what this looks like more deeply, I would like us to imagine a tabula rasa; human consciousness prior to sonic mediations of any sort. As the enactment of all musicking begins with some sort of internal endogenesis, we will all be well versed in this exercise, just by the fact that we possess a MNS.

As the associative matrices we'll be exploring probably didn't evolve overnight, nor first with humans, this will have to be an imagination exploration to illustrate key elements of listening and cognition in regards to sound as a processual unfoldment. We will be unfolding this upon the internal stage of our own enactive capacity; in the praxis of the bioresonant laboratory of direct experience¹⁹⁰. All musicking is rehearsed first upon this stage, within our own awareness, whether a millisecond or a lifetime before the first bowstrike. So the question is raised: what was the human experience of sound (theoretically) before musical conditioning, associations, concepts, or interpretations? Before any mediation whatsoever?

¹⁹⁰ This brings alive the interpretation that the LODE is merely what happens when the MNS, previously interacted with unconsciously (a), is made conscious and explored outwardly. It is thus the exogenation of something intrinsic, and not the creation of something new.

Let us imagine ourselves on a savannah in Africa, surrounded by a small band of closely related humans. We don't have a concept of "tribe"; our experience is "pre-interpretive", completely raw. The exterior objectification of our 21st century minds are the only entities in this exercise that would create this concept; it is this atomizing mind that we are now dropping completely for the space of this attentional exercise. We have no associations about sound, about what it means or is other than just it's raw activity. This is our inquiry.

The raw activity of sound surrounds us, all of the time: the ambient expanse in the morning, the slow rise in aural activity as the sun rises, birdsong, animal sounds: sounds just are, there is no impulse to mediate them in the psychological sense just yet.

What is this like? Can we imagine this? Is it something we can access in our experience right now? (In our neurobiological laboratory, which we are biangulating with intellection herein).

Back to the savannah. The extant sound of the acoustic ecology surrounds us: in the ambient sound we find the background, the foundation which surrounds us in unbroken activity. When do we notice it? How do we notice it? Perhaps on quiet mornings, as the sun rises, we notice what we otherwise wouldn't: our filters open, making sound available in ways that it may not have been at other moments. At these quiet moments, this acoustic background comes to the fore and what seemed distant takes on a completely different life, and we immerse ourselves in it. Perhaps in the dead of night we experience this, as well. What was previously the background of

our experience suddenly becomes the foreground of it, engulfing us in sonic detail and information. It is as if some invisible DJ turns up the volume on these ambient sounds, when no other sounds interfere and interpose upon our conscious attention.

In a moment, this reverie is broken. Near to our small band of humans and their camp, a predator has converged upon a prey; we cannot see them but our sonic attention has focalized upon a short struggle, intermittent low growls, a panicked shriek, and then quiet that reveals their activity in vivid detail. All of a sudden, the entire foreground of our sonic attention is focalized. This illustrates the concept of focal/global attention; the quiet of the morning naturally elicits¹⁹¹ a global attention, when the struggle breaks out, it elicits a focalized attention. We still have no associations, no ideas about what sound means; our listening proceeds as an activity in automatic response to the environment.

As the day progresses, our attention moves throughout this spectrum, between the ambient noise of the environment (global listening), and the discovery of focalized sound objects/activities.

Certain sounds begin to elicit biological responses evoked from memory; the complex footfall patterns of a predator as they stalk in the brush is instantly

¹⁹¹ This notion of *eliciting* listening becomes crucial; how does someone who grows up in a war-torn nation listen differently than someone who grows up in a peaceful rural setting? How has it elicited idiosyncratic listening patterns? Clearly much of their listening is generated by activities which the conscious observer has no control over until they reorient their embodied process to confront them consciously; this is true with all humans.

recognized and muscular contractions that prepare one for flight are initiated, at times seemingly pre-cognitively, in response to a perceived spatialization of the predators movements; birdsong possibly elicits associations with the quiet mornings alluded to before, and thus relaxation and repose; the pre-verbal sounds of a fellow human being and their associated body language still communicates something, and elicits responses, even though there is no language or concept at play in this communication; it is purely biological and instinctual. The trickling sound of a water source elicits immediate associations with sustenance formed from prior experience; all of these induce a biological response, in interactivity with experience. Is there a point at which these responses become psychological constructions? What is this point? Is it possible to locate it?

The low growl of a known predator initiates a whole process in relationship to the environment; we feel a chemical release in our bodies that the 21st century mind might label “fear”; we assess escape routes instinctively and move away from the source of the sound as quickly as possible. This all happens in an instant, unconsciously (a); we still do not ‘think’ about moving away from it, or create a psychological reality from it; everything that has happened so far is instinctual and intrinsic. Let's just assume that for the sake of our exploration.

This pre-psychological, purely biological response matrix in the neurobiology is both simple and complex simultaneously: it lacks the abstractive intellectual faculty we reify so readily, but it is in complex vibratory interactivity with the environment at a degree of complexity not so different from what we experience today. It associates the

quiet of the morning with restfulness and the absence of predators, with ease and first food; with a peaceful quality that is returned to day after day, recursively reinforcing this association, just as the trained musician is recursively reinforced in an “expert mentality”.

The sound of water is associated with nourishment; not the concept of nourishment, but the biological activity as apperceived in the neural substrate, and the recursions of experience. The sound of another human in our band, the familiar rhythms of their feet, perhaps the rhythms of their breath, the timbres of their grunt and other pre-verbal sounds; these becomes associated with conviviality, with interactivity, with connection: not conceptually, but in terms of the biochemical and neurobiological geometries, the equivalents of these yet to be formed conceptions at the level of biochemical substrate as it unfolds in this environment.

Soon, we have a complex association matrix around sound that is intrinsically interwoven with biology and environment. This develops recursively, much as the hyperabstractive faculty does, and much like a musical composition does. These complex recursive relationships aggregate into a sonic awareness of our acoustic ecology that supports us in thriving more and more as the dominant species on this planet. The interactivity of sound reflects the complexity of isomorphisms in the neural geometries; the sound of the predator occurring simultaneously with, and with a particular spatial relationship to a human we are familiar with and “trust” comes to induce different patterns of response than one or the other does on their own. The

same predator that we may flee from instinctually on our own we may stand and fight when we have an accomplice. And this occurs just as instinctually.

Once again, I argue that all of this is occurring within a neurobiological assessment of the environment as a whole by the intrinsic enactment apperception; one that is not conscious, but instantaneous, instinctual (just as in a bird or another primate) and is a product of the isomorphisms between the geometries in the neural substrate, and those found in the unfoldment of natural systems. And that this is embodied in music. Once again, we are also seeking to discover when these biological associations mutate into the psychological reality that is the primary function of our minds today. In other words, we spend most of our time in this reality; when is its genesis?

We hear the song of a bird; we try and imitate it. The biological range of our voice, and the range of the melody, are incongruous to each other. The process of adapting one to the other invariably produces variation, self-similarity. What is sounded is new, original, but also the result of the adaptive process, just as a mockingbird may fail to capture every timbral detail of its subject, and thus be “creative”. What comes out is something different from, but inspired by, the bird. Have we created music? Or has music found us? At what point do mental associations, concepts about sound, arise?

We playfully begin to bang sticks and stones against each; another human nearby joins us. Percussive sounds give rise to shared release of biochemical patterns the 21st century mind might label “delight”. The rhythm may even begin like a

heartbeat. As we play, embellishments arise naturally; new possibilities are discovered. It is difficult to distinguish how much of these are resultants of the natural play of the system (the mockingbird effect), and how much is a resultant of some “actor” “selecting” new possibilities; do they ‘select’ these from their intrinsic enactment apperception? How do they ‘select’ them?

Smiles and mutual “delight” egg each other on: we begin to move our bodies in resonance with the sound, and this becomes part of the associative meaning surrounding the sound. Percussive sound and movement as complementary activities equals “delight”, “conviviality”, and “communal interactivity”: once again, only our 21st century mind places these labels upon elements of the unfolding process. What occurs is purely instinctual, a veritable rube goldberg machine unfolding in nature. Or is it? Has psychological conditioning occurred?

All of the activities that have been described can be enacted instinctually, as progressive generative processes of perception, adaptation, and instinctual response. How do we answer the question: at what point do ideas and concepts about music arise? Is it possible to answer this question?

At some point, mere imitation of the sound of nature (as opposed to the processes of nature) will give rise to original creativity which is a resultant of the system, of these processes, of imitation of the processes of nature in her manner of operation. At what point does this transform into human creativity? I argue that this must invariably involve the formation of identity, of the self: an actor upon a psychological stage who asserts that they are creating, and takes credit for, the

activity which has diverged (in their mind's eye) from mimesis. What becomes tricky is that even the MNS has been shown to be nature in her manner of operation, and possibly very mimetic (as we will explore more in the next chapter), so this assertion of creativity is specious at best, if we are assuming that the “actor” is selecting from a field of intrinsic enactment apperceptions, as well as under any other scenario imaginable.

The preceding examples illustrate several important concepts which I want to highlight. First of all, when what we'll call the “pre-psychological man” experiences a shift in attention from the ambient sound of the environment, to a focal object (when the predator attacks), this illustrates (once again) Pauline Oliveros' concepts of focal/global attention. In terms of the conscious aperture of sound, this function is always at work, responding to the environment. Something in the environment elicits the movement of this aperture in sonic attention; we can see this in musicking operating as an unbroken stream of interactivity between the activity of musicking, and the consciousness of the listener.

What's important to note is that something in the environment invites or elicits certain listening activities, as well as biological responses. And that focusing our inquiry upon this brings attention to what is heard; to listening to the listening of the listener. In the example above, when the amplitude of the sonic ecology becomes low (as on a quiet morning, or in the dead of night), the perceptual filters adjust so that quieter sounds become more apparent, and minute details are noticed. If a loud sound intrudes another internal adjustment occurs to focalize attention, and these same

minute details will not be noticed. This is the internal DJ at the mixing board all of the time, making essential adjustments that facilitate our functional adaptation to the environment. Only these mediations (which occur inside of us all of the time) begin to crossover into psychological re-interpretation (without rigorous inquiry into the purpose of such), convolution, and even unconscious sabotage of sound (from a radical interpretation of sound as having an *a posteriori* beauty that existed before human interposition upon it).

Fast forward to today. We have elaborate notions of what musicking is, and what it isn't. What is beautiful, and what isn't. Who we are, and who we are not. What culture is, and what it is not. How did we arrive at this? What musicking do we create from it?

The first question I ask myself when something doesn't seem to be beautiful is why do I think it's not beautiful. And very shortly you discover that there is no reason." – John Cage

Which brings me to the ways that human beings mediate sound. I believe this is the most important question for us to address, and it will be seen to be an exogenation of the underlying themes of this text, as well as an avenue for profound empirical penetration of them. Just as the exterior mediations of the landscape mentioned in the preface create an oversaturated, unsustainable environment of information (including sonically) in our modern world, so does the unmitigated psychological mediation of sound create an interior landscape that is unsustainable, and which mirrors this exterior reality. Oliveros has pointed out that we may

understand listening on a praxis which includes hearing and listening (Oliveros *Deep* xxii); the raw biological data of sound, and what we do to it: the ways in which we mediate sound to construct an experience. We must understand the ways we do this if we are to understand music as a processual unfoldment through the human instrument. These mediations are what produce the final product in the signal chain, at least from the purview of the conscious observer: sonic experience.

The very fact that we mediate sound points to the fact that we are in a constructed experience. What is the nature of this constructed experience? and: How do we construct our listening? become essential questions to address.

In analyzing and observing our mediations of sound, I have divided them up into two categories, in order to create a meaningful praxis of understanding that extends into all domains of musicking and musicology. These are: biological and psychological filters. As we know, sonic perception is selective and defined by what we filter out; studying this exclusionary activity is revelatory to cognition, consciousness, and musicking – to all of the ways that we human (a).

Biological filters are those essential for human function. They are not intrinsically an addition by the psychology. One enters into a loud environment from a quiet one, and the amplitude levels are adjusted to create a normative experience; it is a purely functional and automatic activity. It is our invisible DJ, as mentioned previously, that constantly adjusts the inputs to help us navigate the world.

Without these, normative, healthy human function is not possible¹⁹². In addition to other identified factors, an important element of autistic individual's experience is the perceptual exaggerations they experience in relation to the environment: they commonly enter a room that most people would experience as being "medium" in volume, maybe a social situation like a coffeeshop, and to them it as experienced as unbearably loud. The resulting adjustment in their vocal amplitude and timbre makes others in the environment uncomfortable, contributing to the recursive process of social perceptions of 'inappropriateness', the resultant loss of personhood within the social network, etc. that sadly tend to be self-perpetuating. They also experience other variations of perceptual exaggeration which prevent them from integrating socially in a normative fashion, and which contribute to the experience of dysfunction; this is just one example. So we can all be grateful for our biological filters, as they facilitate our integrative function in ways that we often take for granted.

Now the biological filters do mediate or manipulate sound in some way, but these are contingent upon environmental interactivity. The direct experience of sound is prior to any of these mediations; in some ways, as subjective instruments we will never experience it. I distinguish the distortions of the direct experience created by these biological filters from what I call psychological filters. These are our ideas,

¹⁹² Which is not to imply that these norms should not be challenged, and changed.

concepts, etc. (mostly sub-lingual) in regards to sound which we use to construct our psychological experience of sound.

These are entirely constructed within the psychological arena. Not only do I experience the biological, instinctual chemical responses induced by the sound of a predator, but I call that “fear”, I have a concept of what that means and how it fits into my psychological matrix, how I should relate to it or negotiate it, and I mediate my embodied process through that. It’s these psychological filters that have come to dominate our experience of music, as well as of life, in the 21st century.

At the gross, superficial level, I have concepts of “music”; of what it is, and what it isn’t, of what I should listen to or shouldn’t listen to, of what the context of musicking should or shouldn’t be. Sound expressions which do not fit the criteria of “beautiful” or “musical” are filtered out; they elicit biochemical responses that are associated with “dislike”, etc. I listen to them less, and to the ones I “like” more, recursively reinforcing those filters, as well.

In actual practice, the process is much more complex. Pleasurable memories and the body states they induce act as reference points in a complex network of associations that form an entire stage, in consciousness, upon which the theatre of musicking, and preference, is enacted. I will argue later that these are involved in an instantaneous apperceptive process by internal coherence matrices that select what is filtered out, and participate intrinsically in socially complicit notions of “beauty”, “worth”, etc.

At their root, these filtrative processes are vibrational in origin and geometry, just as the hyperabstractive faculty is. The pernicious quality of the psychological mediations, when they are not inquired into, is the separation they foment between the raw processes of nature within an individual, and that individual's experience, creating a gap. As mentioned before, the metaphor of biological and psychological filtration may be extended to body states and processes as they unfold in interactivity with sound: each exists in and of itself as a raw phenomenon, a process pre-mediation, and yet are experienced as inseparable from these meditative processes. In other words, modern man will very rarely experience the biochemical processes labelled "fear" without the complex psychological processes of filtration added onto that phenomenon being present. We further mediate body processes in a filtrative fashion; eliminating that which we do not want to experience, reinforcing that which we do wish to experience. Thus the evolutionary advantage of filtration (the ability to navigate complex environments through selectively focalizing vast amounts of information) becomes reoriented in the hands of a fictional conscious observer; the proverbial 5%¹⁹³.

Our musical mediations tend to be in conversation with, or complicity with, our body mediations and their cultural context: they reiterate the pleasurable experiences we wish to recurse (which may, paradoxically, be reinforcements of

¹⁹³ One can see how easily media entities can manipulate this.

incoherent body states at a vibrational level of analysis. This analysis includes such topics as substance abuse, trauma, sado-masochistic tendencies, poor nutrition, audio compression, the lowest common denominator mentality of pop music as a consumable, etc.). Music then becomes a tool for the conscious observer's obsession with pleasure as an end in and of itself (which can be understood to be different from pleasure as resultant of coherent interactivity).

So we must unwind the veneer of psychological mediations placed upon our body states in order to arrive at a direct cognition of what is actually occurring vibrationally; this is part and parcel of the suggestion that embodied practice, as well as the laboratory of direct experience, are the only avenues of penetrating the level of competence as musicians that facilitates becoming exponents of the leading edge. The body, as a complex dynamical system, will produce chaotic resultants: what we have the power to define is whether those chaotic resultants are products of a closed or open system. We define this through the unfoldment of our own embodied process.

These psychological mediations, whether filtering sound, or body processes, are in turn in conversation, and frequently in complicity with, our cultural assumptions. Those musical expressions that "I" "like" are valorized further; used to give "me" value in the context of social relations. They thus become self-valorizing. I seek to share my filtrative predilections and gain affirmation through them from other agents in the social network; in so doing, I reaffirm the value I give to myself through them, their pragmatic value as a tool for my own self-valorization. They thus become entangled with complex matrices of social conditioning, identity, and value, that are

in turn in relation to body states and perception at the lower level of generative unfoldment described above. One can see how very quickly the processes of psychological mediation can obscure, distort, abstract, and even completely veil direct experience, as their complexity in interactivity skyrockets exponentially¹⁹⁴. Considering the unfoldment of these processes is, as a result, essential.

Timbral associations in the voices of my peers and fellow human beings become contextualized within a complex association of trust matrices; certain patterns of sound are associated with various media sources and have intricate meanings upon those stages; I have a whole library of jingles I immediately recognize and associate with certain media outlets (and noone asked me if I wanted them put there!), etc.

While we did not answer the question of precisely “when” this psychological matrix of mediation began to form, it is clear that it is there: my psychological experience of sound is mediated to the hilt. Today, I argue, our sonic experience is primarily enacted on this stage, and so understanding it is vital to disentangling from the historical cul-de-sac we find ourselves circling in. That a dominant portion of musicology addresses this implicitly (even if not explicitly) should be obvious.

¹⁹⁴ Just as this occurs with the intrinsic enactment apperception; in fact, they are directly corrolatable: the difference between a heavily psychologized experience and the direct experience is no more than the degree to which we take these internal enactments, these phantasms, to be real. The degree to which we forget their metaphorical value in the laboratory, and begin to inhabit them as a built perceptual universe.

What I'd like to bring out is that these filters, both the psychological and biological, are, as mediations of sound, fundamentally distortions of the direct experience of sound, of what is. The biological mediations are necessary, and basically benign; they are a product of our functional interactivity with the environment. The necessity of the psychological filters is highly specious and calls for deeper inquiry by which to reorient our relationship with them.

One argument with this is that we evolved this way, and so it must be the way we were “meant to be”; it is the best design¹⁹⁵. **Inquiries into biology, and especially evolution, conceal hidden assumptions that, if the body has evolved a certain way, then it must represent the best possible direction, the best possible design principle: that there is no room for growth and evolution.** That this is implicitly hyperbolic and self-contradicting in the context of evolution should be obvious; in this case, as in all, hyperbole reveals new understanding which must be embraced for forward movement. This is the nature of hyperbole (hyperbole itself will be seen to be actually a product of our psychological mediations, and not some incommensurable flaw in nature; a product of “the framer”).

Certainly there is wisdom in nature; the biomimicry movement (Benyus) can be seen as foreshadowed by Cage's championing of Coomaraswamy historically. Our

¹⁹⁵ One of the most perplexing elements of this argument is the reality that many of the individuals who will make it will simultaneously reject any value in the biomimicry movement; it veils a pernicious fatalism that paralyzes forward movement.

perspectives on technology are further humbled when we realize the degree to which they are biomimetically patterned by nature in her manner of operation without us fully appreciating it. But this does not mean that we make an absolute out of this understanding; it means that we must enter into intelligent dialogue with it.

Nature's wisdom is that she continues to learn; she never stops and rests her laurels at any point in the process as an absolute or conclusion¹⁹⁶. And she makes mistakes! And then she learns from them. This can be simply observed in extreme genetic malformations, which are not the product of a “cruel god” or “fate”, but merely the natural byproduct of a creative process: dynamical life unfoldment.

The assumption that evolution has landed at a perfect organism in humans, and that there is no room for growth, learning, and mistakes, is a naive one. It is a byproduct of human vanity, which wishes to see itself as god self-made in the image of its own imaginal musings. The self-valorizing tendencies of the organism (which we will understand as the resultant of a self-same attractor in the dynamical system as we enter into that domain more) are an evolutionary adaptation whose usefulness has been exhausted.

Furthermore, the filtrative faculties of the organism, which were originally intended to aid us in functionally adapting to the environment around us and navigate extreme amounts of sensorimotor information, has been co-opted by the psychology

¹⁹⁶ That would be a masculine ending.

in unsustainable ways which disentangled embodied process can reorient. In the process, we can reorient our listening, our cognition, and our action, and participate in the creative operation of nature towards our forward evolution that is no longer co-dependently outsourced to an externalized deity or authority.

At the very least we must question the presence of our psychological filters and ensure that our musicking activities are of some autonomous generative process which they are instruments of, and not an instrument of psychology in and of itself. I will endeavor to convince you of this throughout the rest of this text, as I believe the world becomes a better place every time an individual is convinced to allow the “other 95%” of the garden to be watered, rather than just a tiny corner.

And while it would be ridiculous to say that we could somehow name or define this moment when psychological processes formulate, I believe that the imagination exercise just engaged in helps us to frame some implicate principles about the genesis of our psychological processes, as well as of our experience of musicking; it highlights first and foremost the self-constructed nature of them, as well as the fact that this ‘self’ construction exists within a cultural/historical context, and thus puts into question our notions of an autonomous self deeply. Furthermore, it highlights the “mockingbird effect”; that it is impossible to really distinguish (from the outside) what is purely mimetic (variation) and what is truly novel.

So I'm talking a lot about psychological process and another critique I might be presented with is "why is a composer talking about psychological process?" The answer lies in listening and the construction of our experience of sound. The

psychological mediation of sound, whose resultant is our psychological experience of it¹⁹⁷, which is further shaped by the embodied process of the individual, and the degree to which it is conscious (a)¹⁹⁸. Our entire embodied experience prior to psychological mediation - that is something we can explore, as opposed to sound as it is, which will always be an elusive absolute, but whose nearest apperception is, paradoxically, via this direct experience. Paradoxically, because the normative assumption would be that it would be through some sort of rigorous apprehension; and yet music is an embodied art, an apperceptive unfoldment, and those “rigorous apprehensions” are generally abstracted through the lens of an instrument that does not make music.

So a composer must understand psychological processes because these are integral to what constructs the experience of music: the psychological filters. These are a complex dynamical system that operate under the same principles as every other: as weather, as stars in the sky, as a musical composition, as a child's game, and

¹⁹⁷ As opposed to the direct experience of sound, which is our experience of sound minus our filters: in some sense we can only define the direct experience via the *viva negativa*. When we explore dropping our filters, what remains is the direct experience, our experience prior to psychological mediation, not just in the realm of sound, but in the realm of vision, kinesthetic sensations, olfactory phenomenon, etc. which are, as one whole, the seed for our apperceptive interactivity with life, which is further comprised of a mixture of biological and psychological filters, to the predilection of the embodied practice of the individual, to what has recurred in the system: the way they participate in, or are participated by, life processes.

¹⁹⁸ In contradistinction to unconscious (n) as in an ontological object; i.e. “my unconscious”.

they can be understood as one, and studied as such. And also, like a radio station, the CDS called psychological process may be turned off when one is tired of hearing it. Or can it? We must explore that, and eschew the genetic fatalism of evolutionary assumptions.

Everything we have learned as composers is in fact the study of complex dynamical systems, and their unfoldment, from within and without - whose properties may be explored intellectually as well as empirically – and in the end are primarily understood through the most immediate instrument of musicking, in fact the only instrument of music, illustrated earlier through triangulation.

At this level of inquiry, consciousness, the body, and musicking, are all one phenomenon. But because of what one may term ‘dualistic grammatical conventions’, it doesn't appear to make sense to say this: yet those who engage the embodied inquiry deeply enough will find it to be true. You cannot find the line where one ends, and the other begins. And in terms of synechtophany¹⁹⁹, or the implicate activity, it is certainly true: from the frame of the universe as a complex dynamical system, what we have labeled "the body" and "musicking" and "consciousness" are all activities which are explicate exogenations of the implicate whole, which are each equally a resultant of its activity; they are thus one activity, and share the generative seeds of that activity. They unfold within it.

¹⁹⁹ Unbroken dissemination.

Let us diverge for a moment. Pay attention to your sonic environment right now. Who or what is listening? Is it a psychological actor, a “thing” in consciousness? Or is it an activity prior to that, something *a posteriori* phenomenologically?

If a psychological actor, to what does it owe its “thingness”? Can the activity of listening occur without this psychological actor? Or is the psychological actor the source of it, and thus listening contingent upon that? If so, how did listening occur in the pre-psychological man we imagined before? At what moment did this psychological actor as a phenomenon emerge in man?

Essential to understand in terms of our psychological conditioning is that it has primarily been seeded by outside authorities, who tell us what is musical, what is beautiful, what is not, etc., as well as who we are. And that as musicians, we have participated in this activity to a greater or lesser degree. In fact, one may analyze the entire stage of musicking from the understanding that various musical entities are vying to be the authority, the expert, telling the listener what is beautiful and what is not, and fundamentally self-valorizing the musical activity that they create. They are attempting to control the modes of production of consciousness.

So where does this self-valorization come from? I believe, as we discussed in brief before, that this is an activity of man that has an evolutionary imperative, one that developed somewhere around the time of the imagination exercise we engaged in above, of the “pre-psychological” man. It involves the evolutionary advantage not just of self, but also of community-valorization.

Community valorization would reinforce solidarity in the still forming small groups, with primitive social adaptations, creating an evolutionary advantage over other small bands, as well as predators and the vicissitudes of the environment which early man inevitably faced. It is easier to face all of these elements if one believes that one's group is “the best”, “is great”, or is “ordained by the gods”. Furthermore, self-valorization would reinforce a strong identity that could compete for social status, personhood, and value within the forming social matrices; all of this would serve to push early man towards increasing excellence, selecting out agents who refused to participate in the pre-cursors of the modern “rat race”.

At the end of our imagination exercise our pre-psychological man was exploring rhythmic permutation with a fellow band member. Now imagine he wakes up the next morning, before everyone else, and finds a rock out on the savannah upon which he sits and listens to the acoustic environment. With no distractions, and in the quiet of the morning, his filters are naturally open: exquisite sonic details become apparent, revealing their unfolding patterns to him.

One could say that, without intending to, sonic mediation has arisen naturally. He closes his eyes and brings his awareness to the quietest sounds he can observe in the soundscape. At the edge of his internal amplitude floor, he can barely make out the difference between minute, squirrely permutations of sound that emerge from the ambient sound of the environment, and the sound of his own thoughts. Amidst this interactivity, a recursive melody emerges; he squints his eyes in concentration as he allows this theme to unfold. Soon he is singing it; he is elated at his discovery. Soon

he is sharing it with other band members. “The gods gave me this song!” “It is the best music ever made!”

In music we see the culture of self-valorization hyperabstracted to an extreme degree in the modern context, where it has developed recursively for many generations, even aeons. The canonical tradition, facing lowered box office sales and a generally lowered social perception of value, must convince people of its value, conditioning them to consider participating in their musical activities, consciously conditioning them to desire the social capital they are told that they will receive from it. Thus they are loath to give up control over the means of production of consciousness.

Various constituents within the art music tradition become vociferously competitive for less and less resources; rather than supporting each other’s activities and cultivating a collaborative and expansive field, they become concerned more and more with their own survival and self-valorization.

Various pop artists and corporate entities associated with them are involved almost primarily with conditioning people psychologically to consume their music; they have made of it an art. Musical concerns become almost irrelevant in this lowest common denominator environment, as the imperative of competing on the hyper mediated landscape of pop culture demands constant adaptation in the arena of competition and money acquisition. Musical creation demands only the mimetic reiteration of a formula, and is given exponentially less time and resource than PR activity.

Some evolutionary leaps serve a purpose for a short time, and play out their value before fading into biological history. Has this imperative, that of self-valorization, run up against a glass ceiling in the cross-cultural collision of the global culture of the 21st century, where it is no longer sustainable? Why do we give music value, and how could we possibly give it value only for extramusical reasons? To understand this, we must understand the processes of cognition and neurobiology in relation to musicking more deeply, as well as its relation to complex dynamical systems and nature. At every step of the process, new layers will reveal themselves.

Ethnomusicologists have noted in great diversity the interactivity between musicking and war, acquisition of power and leadership positions, reiteration of cultural values, etc. as well as the hyperabstraction of these activities on the modern stage in terms of media, monetary acquisition, etc. We can find at the center of all of these the generative principle of self-valorization in operation: of an individual, of a culture or cultural entity, of a corporation, of certain ideals, etc. All of these are further exogenations of the self-same attractor in the center of the dynamical system.

Thus a strong interactivity between the self-valorizing activities of the human psychology, and culture, have a feedback effect that would be beneficial to survival, especially during a time period in human history replete with war, domination, the assertion of hierarchy, confrontation of natural forces, etc. By reinforcing self-value (whether of individual or society) psychological solidarity is constructed by which to stave off the forces of nature, of other warring tribes, or even other factions within one's own tribe, etc. In addition to some of the 'aggressive' activities mentioned,

music has also been noted in its interactivity with seemingly "benevolent" activities such as child-rearing, initiation ceremonies, ritual, etc. All of these, upon close examination, contain an inherently self-valorizing element, as well: the reinforcement of the self. So it cannot be simplified into a positive/negative dichotomy, and it will become essential for us to distinguish between conscious observer (n) and conscious observer (a); upon this praxis lies the cognitive turnaround alluded to.

Thus psychological processes across the spectrum have primarily been self-valorizing, a generative evolutionary imperative that allowed man to progress from a stage of being dominated by exterior forces, to dominating them. This, I argue, also fundamentally reinforced the manipulative quality of cognition.

The question we can consciously ask (some may argue 'for the first time in history'), is: what value do these self-valorizing activities hold? What psychological processes do we wish to leave behind, and which do we wish to reinforce, to continue to participate in? Do we need to stave off exterior forces in the same way we did several thousand years ago?

For those processes we participate in will recurse, and further influence the system. All exist in participation within a complex network of recursion; the opportunity is to be a resultant of enfolded orders of coherence, which naturally have coherence and organizational unfoldment potentiation beyond those apparent within our unfolded order. The suggestion of this text is that psychological processes no longer need to be emphasized as heavily as they have been historically and made an instrument of self-valorization. That the issue of the self can be addressed. That one

may become an instrument of the activity of the system itself, of enfolded orders of complexity and coherence enfolded in the system, hitherto unrealized, and that the arts are an embodiment of this: this can be seen to be what all great artists have done. They have created art that spoke to the tendency in the CDS to move towards higher states of synchrony and coherence – despite the mediations of psychology that would inhibit this towards self-perpetuation. Fundamentally: there is a self-same attractor at the center of the dynamical system, what some might call the ego, which perpetuates this activity of self-valorization, and its usefulness must be questioned.

And certainly disparate great thinkers across disciplines come to agreement upon this topic, something we must pay attention to, for it is rare! Namely that it is integrally important that we move beyond the activity of this self-same attractor, or ego, if we are to understand the intelligence and creative potential of our organism. Gerard Pape, speaking about Xenakis, says that: "... [to Xenakis] the moment of creative invention is a moment of 'ek-stasis,' that is, a going beyond the limits of the ego of the individual." (Pape). And Piaget: "Through an apparently paradoxical mechanism ... it is precisely when the subject is most self-centered that he knows himself the least, and it is to the extent that he discovers himself that he places himself in the universe and constructs it by virtue of that fact. ... This organization of reality occurs, as we shall see, to the extent that the self is freed from itself by finding itself and so assigns itself a place as a thing among things, an event among events." (Piaget *Construction of Reality* xii-xiii.) Cage, quoted earlier, talks repeatedly about

going beyond psychology and preference in ‘Silence’ (Cage *Silence*). And we could go on.

So let’s explore, all of us, what it looks like to remove the conscious observer from the stage, let’s unfold that process with our implicate methodology, and see what happens. Let’s explore what it looks like to make the conscious observer an instrument of the activity of the field, rather than the activity of the field an instrument of it (ostensibly man dominating nature embodies generatively). And rather than making judgments upon this as gratuitous repetition of an activity already understood and dismissed, let’s make an actual inquiry into the systemic implications of it, with the fresh attitudinal approach pre-requisite to this unfoldment, as well as to appreciating new music, new ideas, and life processes.

In response to Xenakis above, I say not only a moment of ekstasis, but a moment of seeing beyond one’s frames²⁰⁰; thus it serves not only music but musicology, as well as all other academic disciplines – to see, or listen, or experience outside of one’s frames, beyond the limitations of one’s frames, makes true intelligence possible. It silences the chatter of the polluted noosphere – and makes it possible for us to “hear” the intrinsic apperception which is resourcing us all of the time with incredible amounts of useful data about the system we are situated in. It

²⁰⁰ Or dropping them, for we will see that the dropping of our frames makes this ekstasis possible, opens the filtrative aperture to allow for higher synchrony and coherence to self-organize.

points further to the neural synchronies observed in both Buddhist monks and master musicians (Dobbs), as not an activity “done” by the conscious observer, but as an emergent phenomenon of the field, the self-organization of the system intrinsic. The neurobiological underpinnings of this and the isomorphisms between each layer of process will continue to unfold as we go along.

Is it possible to get rid of the activity of psychological processes? Or is this not necessary? May we merely reorient them: then the question becomes, is it possible to be the resultant of the field, rather than the self-same attractor? Maybe 95%/5% implies an intelligent ratio in this enterprise: 95% the field, 5% the conscious observer. I will leave this for us each to discover for ourselves: as reiterated, it is entirely an inside job. These are questions we must all answer in the implicate laboratory, first, and then we can talk about them as a tradition competently. When some of us speak from experience within that laboratory, and others criticize with no experience within the laboratory, it does not make for a coherent conversation. You have to go there to know there; it is entirely an inside job. It is similar to expecting a non-trained musician to know what an augmented triad is. Who cares what an ‘augmented triad’ is? Let's go there, and discover it in the unfoldment.

So we must examine it from within, or else we have redacted our duties as generative agents. Our musical experience is a synthesis of our psychological and biological mediations of sound: the resultant of it. While my work is not an ethics of music per se, it implies an ethics of consciousness that should be explored in regards to its unfoldment in music: in the praxis of direct experience and its mediation is all

musical experience, occurring upon the stage of consciousness. Musicking will inevitably inculcate those processes which it is introduced to with its own vibratory processes (humans, culture, the natural environment, etc.), transmitting its generative activity: thus unveiling those generative qualities, and understanding the implications of the direct experience (which all of us are mediating to some degree right now) through one's own body, one's own instrument, one's own bioresonant laboratory allows us to answer the question of how we influences exterior process; our actual vibratory impact. One approach is through exterior measurements of vibratory phenomenon; another is through interior, direct observation. Both arrive at the same place.

And understanding how we mediate sound is at the core of all of this. What generative principles will a musical composition transmit to the complex dynamical systems it comes into contact with, whether individuals, or traditions? That of a closed system? That of an open system? The self-same attractor? 'Freedom'? I will leave these questions for the time being, humbly opening pandora's box and inviting us all to inquire deeper in the meantime: is there a musical ethics implied herein, and if so, how do we address it? How do we address the actual vibrational, psychological, and social impact of our sound(ing)s?

More Neurobiology

Our tabula rasa imagination exploration unveiled the generative processes underlying music in a very raw form. As the associative matrices of these activities of conditioning recurse and grow in complexity, they are literally in conversation with themselves. Neurological wiring in the brain mirrors these processes, isomorphically mirroring them.

A common saying when speaking of the neurobiology is that nerves that wire together, fire together. This is certainly true in musicking. It is the activity of musicking, in continual conversation with biology and its means of filtering sound, that gives rise to the next iteration of neurological firing, and wiring; thus the generative process recurses upon itself. The resultant is a dynamical system, with chaotic resultants independent of predictable outcomes.

Thus listening as an activity can create unexpected musical experiences, as well as the next iteration of our musicking; as it frames what we experience (in a fashion more fundamental than the framing of conceptual thought, which is a reified fragmentation of attention), through its own iterative resultants, it also frames what we produce. Imprinted in the brain are complex aggregations of patterning that are the resultant of the process above alluded to; therein we may find analogues to all of the vibratory patterns embodied in music, as well as life processes intrinsic. It will be useful to see the degree to which new imaging technology emerges which can

visualize the details and geometries of unfolding patterns (as opposed to gross imaging of atomized brain “sections”, as we see almost exclusively now).

The theory of art and musicking valuation presented by Ramachandran and Hirstein (discussed in the first neurobiology section) breaks down when applied to the emergent streams of musicking from the last hundred years which I intend to put under a particularly focused microscope in this text.

For example, 4’33”, or Duchamp’s urinal may at first not seem to fit in with this hyperabstractive theory. They are, by their nature, not in relationship to the conceptual matrices and lexical associations of the dominant culture in the same fashion as more traditional works of art are. What “primitive” are they hyperabstracting? They do not represent a “face”, or the sound of a bird, or an ideological statement. They do not refer back to an explicable generative primitive that exists in the atomized landscape; one might even observe that they in fact refer to a terrain intrinsically disentangled from this landscape, if they are referring to anything at all. One might also say that, at times, they could be considered a reaction to the dominant culture, and thus in conversation with it through said reaction, in bas relief, like the space which vibration occupies. But they are not of the order of “conceptual objects” and reifiable primitives hyperabstracted in the simplified model which Ramachandran and Hirstein present. They are, understandably, experts in the domain of visual cognition, and this oversimplification may be seen as a byproduct of this and the overemphasis on objectification which has been shown to be endemic therein. (McLuhan)

Ramachandran has made a point of stating that he is dealing exclusively with a subset of art that is “intelligible”; that placing a “toilet bowl” or a “blank canvas” in a gallery is concomitant to saying “...perversely, the opposite of art is art.”

(Ramachandran *Consciousness* 45:25-46:05) I disagree, and believe he is misapprehending the extent to which his own theory may be made relevant. Certainly, some expressions of art have gratuitously hoarded viewers’ attention historically, but this is not cause to discard that which is not immediately intelligible to the atomized mind. What Ramachandran misunderstands is that the hyperabstractive activity, like communicable concept and primitive, is best understood as a metaphor for a deeper activity which simple laboratory environments only address through the lens of top-down examples. The hyperabstractive theory goes way beyond the realm of the conceptual object in its implications, and in actual interactive unfoldment in the continuum/flux.

What we must understand is that what is being hyperabstracted is the neural substrate itself, the unfolding geometries therein, and fundamentally, vibratory processes which are analogues to music. To miss this is to miss the whole essence of the matter. It is not the concepts as we think of them which are being hyperabstracted; these are themselves abstractions of this more fundamental activity and endemically psychological filtrations. The phenomenon occurring in the brain and neurobiology is concomitant to sound as it is, and our conceptualizations of them are tantamount to psychological filters. It is only psychology that wants to contradistinct its own processes to those of nature; even the most reified knot of psychological assertion is a

vibratory unfoldment just waiting to be remembered.

These fundamental processes are expressions of a higher order of coherence embodied by the breaking out of the forms we seem to be embedded within; thus a theory of art that is contextualized only within those forms breaks down, and is in danger of discarding the very property by which art actually elicits pleasure and value: self-organization. For the organism is a self-equilibrating, self-organizing system; art which effects its listener through overt metaphor and conspicuously reifiable content facilitates this self-organization through that medium. Art which does not (emergent streams) effects it through that medium; one might say a syntactless transparency, a mediumlessness; that through an absence of asserted reification, and modus' of intrinsic disentanglement, they transmit to the listener the listeners own intrinsic self-organization. They return the listener to themselves. And this is why the few who are able to apperceive through the veil of acculturation the enormous value of the avante-garde tend to go on to love and defend it vociferously.

So in terms of action-contingent MNS activity, the organism may have had a prior experience wherein what was experienced as pleasurable was observed to be the breaking of normative patterns, or what emerged from that; or possibly a quiet morning; or possibly a meditative experience; was fundamentally experienced as implicit, rather than explicit. Something pointed not to a reiteration of their associative patterns, to a further recursion and mimesis, but to an underlying organizational order which shined through them, and was revealed either through

their disentanglement, or through sheer *a posteriori* apperception. And then the organism experienced hyperabstractions of this activity in art as pleasurable.

Because at the level of neural substrate, primitive “face” and intrinsic activity are equally accessible as seeds for hyperabstraction. What this further points to is that what consciousness experiences as pleasurable is heightened coherence, and that coherence is often facilitated by what we don't do as much as it is by what we do do. By silences as much as our noise. And so 4'33” and Duchamp’s urinal must be understood in terms of the vast liminal landscape which they have at their disposal, because they have situated themselves outside of normative constraints.

Thus it is understood that art and music provide this as a service, bringing us into conversation with a vast domain which normative communication and life processes not only do not access, but veil. And we can find this reflected in the neurobiology. In this understanding of the hyperabstractive theory, this activity brings one into relationship implicitly with both known element (the abstraction) as well as orders of coherence beyond those associated with this known (that hyperabstracted)²⁰¹, neurologically wiring new orders of connectivity in the brain. Art which cuts out the “known” elements merely cut out the middleman in the process, so to speak. They return the modes of production of consciousness to its rightful source.

²⁰¹ Revealing a hyperbole between hyperabstraction as an actual neural activity in the domain of what is, and abstraction as a psychological act. Important to remember here is that what is being elicited are actually *complex dynamical systems of vibratory patterns exhibited in the neuronal network*.

I call this “the reautonomization of consciousness” wherein autonomy is not of an atomized noun (the conscious observer) but rather an *a posteriori* generative quality intrinsic to consciousness, and life, itself.

Simple metaphor, etc. is interacted with all day long by your average human – in art, the number of associative connections quickly achieves a level of coherence that is of a much higher order – Ramachandran assumes that the hyperabstractive activity can be reduced exclusively to reifiable elements as primitives, and that art which leaves that domain has eschewed cultural complicities and should be consequently stripped of its status. It is much like the principle of public flogging; that any entity which seeks to move beyond the domain of cultural constraints must be made a public example in order to uphold those constraints as a recursion of authority structures. If not confronted, this activity leads to a flatline culture wherein the leading edge (as well as living culture in indigenous contexts) is forgotten and lost; a latent possibility, the echo of human’s true intelligence and creativity.

Raw activity in the neural substrate that cannot be signified through words and concepts (which we can analogously link to the 95% intrinsic activity of the brain) is the actual source of all of these hyperabstractions, including the apparently “conceptual” ones. A psychologized concept is not the limit of the human being. In fact, this is one of the most important generative truths art can transmit to an observer or listener in the modern age. To limit art to that which rejects this is an unfortunate poverty which mirrors our rejection of ecological concerns, concerns for indigenous rights, as well as basic humanitarian concerns, and eschews arts’ very function in

favor of a much reduced, and historically state sanctioned, function: that of mimesis and recursion of cultural norms as an *a priori* purpose in and of itself.

If the hyperabstractive theory has any value, only 5% would theoretically occur in the domain we preference in the atomized perspective and the scientific purview, that subjectable to the subject/object dichotomy; the other 95% would occur in a much vaster domain²⁰². The hyperabstractive theory is actually much more broadly applicable if understood from a deeper, less constrained context.

When we drop our psychological filters, the direct experience emerges as a natural phenomenon of the system. This is not something the psychological actor needs to “do”, it is something intrinsic to the organism. It occurs not just in overt attentional inquiries, as engaged in this text actively for empirical unfoldment, but also as an organic byproduct of life processes. Every human has experienced this at some time or another; maybe while watching a beautiful sunset, or jogging early in the morning, or observing a challenging piece of art²⁰³, cooking a meal, or tending to a garden; spontaneously, we forget to inhabit our mediated reality (as we've been

²⁰² This is assuming that the ratios in intrinsic brain research have a metaphorical significance in relation to our ontological enactments (or non-enactments) in art, which I believe they do.

²⁰³ My intention in situating art in the middle of the list is to eschew any implication that art has exclusive province over this intrinsic, or implicate activity; any human process can arrive at it. I would be repeating historical errors of religious authority if I in any way implied that music was the only way for an individual to awaken this latent synchrony which is their birthright as a dynamical system, and as simple to facilitate as tending to a garden.

trained). The direct experience emerges - our psychological filters have dropped. The experience is blissful; it is the “ekstasis” of Xenakis, and the source of all creative inspiration, intelligence, and value.

The most important function of art is to facilitate this; this is the true explanation for the pleasure associated with it, and its value association. Systems are inherently self-organizing; in the case of the human system, endemic psychological process inhibits this self-organization. Thus it intrinsically craves an agent of disentanglement, and it believes itself incapable of facilitating this. Great music disentangles psychological process from its recursive loops merely through the vibrational geometries it transmits, whether it is Oliveros, or Fluxus, or Bach. The average observer may find in the avante-garde a vicarious avenue by which to satisfy this very real human need, to be in contact with the underlying generative activity of their existential core, without being publicly flogged. Often it is just for a moment: as if one has been caught with their hand in the cookie jar, but this moment is enough for the self-organization of the system to emerge and organically produce synchrony and coherence of a heightened degree to satisfy this. It is also enough to convince the organism that it wants more of it! Perhaps if the organism believed they could facilitate it themselves, they would not look to outside agents; perhaps the job of a sincere artist, like a sincere doctor, is to put themselves out of business: to return the modes of production of consciousness to its source.

4’33”, Duchamp’s urinal, the Deep Listening community, and other emergent streams take this process to the next level: through process, form, and content they are

hyperabstracting geometries of the direct experience, the intrinsic ones, rather than the extrinsic ones. Furthermore, they at times produce a level of intrinsic interactivity which translates into the listeners embodied process a mirror of this disentanglement, and actually succeed in eliminating this middle man. They inherently confront the very faux pa of the conditioning process itself, and the conditioned state of humans, as well as the manipulative *a priori* status this has assumed in our culture, cognition, and reality. It comprises a terrible (and hilarious) joke at the same time; one which the Dadaist movement (for example) made a profession out of hyperbolizing, and through said hyperbolization, disentangling.

Return to the direct experience and the intrinsic is integral to the evolution of man in the modern age; when this contact is made, self-valorization no longer serves a purpose. Value no longer need be outsourced. As an activity, return to the direct experience is neurobiologically wired just as concretely as the conceptual objects which we exteriorally hold as “concrete”! So if a listener has prior experience with the direct experience through any avenue, art which hyperabstracts those neural geometries will, theoretically, elicit excitement of those action-contingent neural patterns in the MNS, as well, and this clarifies the errs in initial interpretations of the hyperabstractive theory. And considering the intersections between intrinsic activity and direct experience, we all have ample prior experience, so there is no exclusive province to trained musicians.

Canonical neuron activity reveals a whole other dimension to this conversation. Canonical neurons are excited when the activity observed is

bioresonant with the actor's body and its action potentials (Rizzolatti , et. al 1988) (Rizzolatti & Sinigaglia 2008), even if there is no prior experience. For example, if a novel object observed fits the shape of the hand, the canonical neuron system imagines the bodies implementation of it, and excites an imaginal enactment through nerve firing. This suggests that a listener with no musical experience can still engage in an imaginative enactment on this level, as all musical instruments will be 'usable' by the human body by their very nature, or bioresonant, and subsequently subject to canonical nerve activity. What is the extent of this? Do individuals with greater imaginative capacitance exhibit more canonical neuron activity? How about individuals with higher capacitance to experience novelty? This merits study, as it would reorient the interpretations of the data rather significantly.

Right now, the data is interpreted in a rather limited domain. We must reason: just as the observation of the hyperabstractive activity (in relation to the Seagull mother's beak, or the mice) does not translate into that activity being exclusive to that domain (or the domain of reified ontological objects, such as conceptual objects, faces, etc.) similarly it does not stand to reason that the limited observations of canonical and mirror neuron activity in the simple enactive situations of extant research encapsulates their entire domain; these may be metaphors for a deeper activity, and not descriptors of it. For example, it is completely possible that canonical neurons fire (and wire) concomitant to the degree that an individual enacts new scenarios mentally, in complex interactivity with their outward performance of a familiar action. It is in fact probable, from a synthetic and multi-dimensional

understanding of cognition. We know that humans are completely capable of constructing a dissonance between the inward and outward enactment. In fact, it is one of the things we specialize in!

Take, for example, extreme phobias. We know that a person may acquire a learned fear response wherein, since they have developed a habitual response towards an object, they react (quite viscerally and even precognitively at times) as if it were a snake about to bite them, or something that posed a real threat, even though it does not. Their nervous system kicks in as if it were a real threat, however, following the experienced reality of their consciousness. In extreme cases, paranoia includes construction of elaborate scenarios which are not rooted in prior experience, but which become lived experience. Why would canonical and MNS firing not follow the experienced reality of the observer in just as fluid, one might even say creative, a fashion? Why would they limit themselves to simple action relationships addressed in atomized laboratory situations?

In other words, it is completely possible that action-contingent activity in the mirror-neuron system (in a trained musician, for example) will occur alongside a complementary canonical activity when an individual has consciously trained themselves to experience the novel even in seemingly familiar situations (just as the paranoid individual has “trained” themselves to experience fear in situations where it is not logical). Or, say I imagine I am in a room with a table in the middle of it, and on that table is a hand-sized instrument which I pick up and play. And it makes wonderful music that nobody has ever heard before; all of this is enacted in my

imagination. Does the canonical neuron system fire then? This merits study, as current research does not address it. Until we study it, we cannot rule out the possibility that the neurobiology works in a much more dynamical fashion, and that extant research is merely observing the tip of the iceberg, and forming assumptive conclusions from it. From my own experience with consciousness and the body, it is more logical to assume that the neurobiology is in complex interactivity with consciousness in a spectrum of unfolded orders of action potentials than to assume that those action potentials take one-dimensional shape in unfoldment; one of haves and have-nots in the realm of experience, for example (as embodied by assumptions that only trained musicians can appreciate “complex” music). Often neurobiologists might shy from considering these avenues of research viable because they include the ‘subjective experience’ of the observer, and are thus ‘soft science’. I would counter that their approach is ‘soft science’ to me, because they are disenfranchising the totality of the expression of consciousness as it embodies through form, which my methodology focuses upon.

For example, imagine I have played the piano all my life (which I have), and I watch somebody else play piano, but I experience such an intense appreciation for the idiosyncratic fashion they perform differently than me, the uniqueness of their bodily engagement (which I naturally cognize bioresonantly) to the degree that my neurobiology processes their playing as literally novel, different from the atomized primitive “playing piano” as a black and white phenomenon. Does my canonical neuron system fire more than the MNS in this case? Or maybe exclusively? This

merits research. What we currently have does not address this, and other contingencies, that tease out the subtleties of consciousness in its expression through form. Researchers have made too many assumptions from limited data, and from a lack of empirical perspective: from a lack of embodied process. They assume a black and white model which history has shown to be short lived; it is thoroughly possible that a trained musician listening to music who consciously chooses to experience that music as novel would exhibit canonical firing that contradicts the current one-dimensional models. Conversely, we should be willing to explore the possibility that an untrained musician listening to music will experience MNS firing – not in relation to the action of playing music, but in relation to the action of canonical neuron firing in response to observing the activity of others playing music – which they presumably will always experience when observing musical unfoldment. I understand consciousness to be multi-dimensional and interpenetrating, and this scenario is more than completely plausible, it is predictable from my experience. Neurological interpretations of select systems as autonomous units that operate separately from each other are distinct artifacts of the atomized mind and stubbornly ignore the infinite dynamical interactivity between systems revealed here, and implicit in the praxis of direct experience.

It is more reasonable to assume that the data we have collected reflects a bioresonant field sensitive to the interactivity between consciousness and action. The significance of the MNS is that nature has put a bioresonant laboratory inside of us

through which we can enact²⁰⁴ and explore infinite permutations, and use this as a petri dish for knowledge formation, creativity, action formulation, etc. My notion of a bioresonant laboratory of direct experience makes of one's embodied process a biomimetic mirror of this at a level of permutation we are only beginning to realize the extent of. What I am arguing against is an atomized interpretation of cognition that prevents us from apprehending the generative activity of life at a more fundamental level of processual unfoldment.

The significance of canonical neurons is to illustrate that the MNS is not an end in and of itself; musicians garner an “expert” listening but this comes at a cost; one could theorize that there is a nearness to original listening intrinsic to the “naive” listener that is in turn nearer to intrinsic activity in the brain, and thus highly relevant to our inquiry into cognition and musicking. All musicians know there is an art to being both “fresh” and “skilled”; to never forget the danger of becoming an instrument of one's competencies to the extent that one loses touch with their musicality: with what is actually unfolding in the continuum/flux, which is where music is discovered.

If we adopt the spectrum of interpretation suggested above, we could posit that all listeners are enacting music internally in idiosyncratic fashion on a spectrum between purely imaginative (potentially correlatable to canonical neuron activity, for

²⁰⁴ Even ‘enact’ will be seen to be a functional reduction as we proceed.

the sake of exploration), and “expert” (or “those who believe they know.” - potentially correlatable to the MNS). And of course we all know that it is anyone’s guess which side of this spectrum it is more enviable to occupy, as the “expert” tends to become burdened by their knowledge just as much as they are liberated by it.

We can further speculate that the imaginal excitement of canonical neurons sans MNS activity is part of the appeal of music to non-musicians; there is a sort of blissful naivety in this. Perhaps it serves to keep that experience in a state of perpetual freshness that the expert can (seemingly) never go back to. We can speculate further that the MNS action-contingent function may keep one recursing in mimetic pathways, which would incontrovertibly have to be considered a weakness for a creative artist²⁰⁵. Canonical neuron function could then be explored in relationship to “beginner's mind”: to facilitating one’s exploration of an imaginal field beyond the mimetic. It is clearly bioresonant in function; it also appears self-evident that a composer, who must apperceive the potential success of enactments never staged before, would have cultivated a functioning canonical neuron system that has not

²⁰⁵ “Nerves that fire together, wire together”. What recurses, reinforces. Thus, if repetition of the experience of 'being a skilled musician' is recursed for 30 or 40 years (both by musical activity as well as musical listening) without any learned plasticity, it is reasonable to assume that the neurobiology becomes basically hard-wired to a mimetic recursion of activity. What was initially a “beginner's mind” becomes an “expert mind”. If the neurobiology is being wired more and more to recurse in this limited fashion, does it become less and less capable of adopting new pathways? This would reveal that, unless creative *inquiry* is kept fresh, the application of rote skill alone would not be enough to stave off atrophy.

atrophied into the inherent mimesis of the 'expert' mentality, and dependency upon previous enactments for the realization of their art. Thus it seems logical that said creative fluidity would be facilitated by neurological enactments that 'un-thing' the built landscape of the perceptual universe (disentanglement), and the possibility that the canonical neurons may be correlated to the capacity for fresh processual perspective.

It's plausible to explore the possibility of a spectrum of analysis; that the mirror neuron system may be associated relevantly with the known (that which we draw upon previous experience to interact with and make meaning of) and the canonical neuron system the unknown (that which we rely upon bioresonant imagining to interact with) and that current research has interpreted resultants within a limited domain of this more complex activity exogenated in the realm of simple actions and their interactivity with neurobiology, and that this is further an illustration of the sort of reductionist activity critiqued in the opening chapters of this text. I am not saying this interpretation is true or not, but rather that we need to think critically about the implications of this research, which a lot of people have drawn bold conclusions from over the last 20 years that only serve to highlight some of my opening critiques of our modes of knowing, and *a priori* framing. Science should be about creative thinking (Bohm and Peat). A true artist, then, would be an expert in navigation of the realm of the canonical (a) in hyperbolic relationship to the canonical (n), with an ongoing competency in the realm of the enactive (a), and the one-dimensional, hierarchical model of cognition would have to give way to a multi-

dimensional, inter-nested model of cognition, wherein one-directional signal flow is understood to be only a reduction for the sake of conversation; a metaphor, not a reality.

One of my favorite experiences is learning a new instrument. As a musician since the age of 12, I notice that when I sit down at the piano, there are whole tropes of syntactical associations around the activity that kick in immediately. Tonal relationships, non-tonal relationships, complex rhythmic patterns, simple ones, what I should play, what I shouldn't, what's music, what's not, etc. I feel like I have no space, there is so much of it! I wouldn't sit at the piano ever again, except for the fact that I've trained myself not to react to these, just to notice them, and now I am in conscious creative relationship with these forces, rather than being at their mercy. But it took a concerted embodied process to cultivate this!

However, when I learn a new instrument, I have “beginner's mind” for a short period of time, and the experience is inexplicably blissful. Several years ago a roommate had a stand-up bass. I had played guitar since childhood, as well as piano, so it was easy to teach myself this instrument. Every day I would spend hours at it; simple pentatonic phrases that (at the time) I would never be caught dead letting someone hear me 'play so simple a phrase' at the piano, gave me endless pleasure; enormous timbral complexity, gestural depth, rhythmic novelty; all were revealed to my ear in it's “naive” state. I literally “heard” the sound differently; my listening was different. I believe that years of MNS aggregation in my experience with the piano (without the balancing force of listening training I have now) literally caused me to

listen differently when playing the piano than when I played the bass; and, most significantly: 1) it caused me to listen in a fashion that was reductive, that reduced my listening possibilities, and that was ostensibly a symptom of an ‘expert’ mentality 2) my listening emerged from my embodied process, and thus, just like cognitive interpretations of the neurobiology, must be addressed within the context of its multi-dimensional interactivity with all systems of the body, and not as an isolated unit and 3) my experience with listening practice (which was entirely after this incident) has changed my listening experience since. My listening has become disentangled through embodied process.

This story lends neurobiological credence to the necessity of trained musicians engaging in an embodied process of disentanglement. It also points to the complex interactivity between listening and the embodied process. Great improvisers, I believe, cultivate a fresh ear, and this facilitates improvisation. It would be a useful neurobiological study to see if they exhibited higher canonical neuron activity than less skilled improvisers, as this would support some of the previous speculations about there being a spectrum of expression contingent upon ones listening and dynamical interactivity, and that conscious cultivation of the capacitance for bioresonant novelty (as exhibited by improvisers) might show up on brain scans.

These disparate understandings of neurology can be expanded further into the domain of intentionality, as well. As alluded to earlier, neurobiologists have concluded that the activity of the MNS which I call the intrinsic enactment apperception apprehends not just infinite creative possibilities, but specific ones, as

well. These include intentionality as a local phenomenon, as well as the appreciation of a specific piece of art as a subset of its activity.

Thus, this faculty, like listening, is an aperture that can be globalized (to apperceive and explore various possibilities as part of an artistic process), as well as focalized (to apperceive specific possibilities as part of artistic appreciation²⁰⁶), for example in the appreciation of art. This further points to how we ascribe value to art: we have an intrinsic capacity to apperceive the geometries and interactivity of the underlying generative activity it exogenates, including the intentionality of the performer as an expression of this.

This is completely compatible with my interpretation of hyperabstractive theory; in fact, it locates it within a bioresonance and interactivity that highlights the degree to which it is a product of natural iterative unfoldment, and not psychological process or conceptual reification. Of implicit unfoldment, as opposed to explicit, as we will unpack later. Of the continuum/flux, and not reductions of such.

That this intrinsic enactment apperception has been concluded to include an apprehension of the musician's intentionality as part of a larger matrix of geometries,

²⁰⁶ These are obviously gross oversimplifications for making an initial argument; in actual practice a listener is moving between in a spectrum of focal and global intrinsic enactment apperception, and the reclamation of the global end of the spectrum in their process is vital to this texts' intentionality.

Similarly the artist focalizes attention upon enactments' she is pursuing; hence it always exists in a fluid spectrum.

in an “interactive union with the whole environment.” (Corness), further leads to the argument that the intention of the performer is what is actually being produced and understood in musicking. This is an intriguing but premature conclusion, true only in part; true in relativity, but not in essence.

It also leads us to a deeper understanding of the level of interactivity occurring in music at the level of consciousness. The question is: do we leave this interactivity alone, as we have for centuries, continuing to create comfortable “controlled” environments wherein we horde the modes of production of consciousness, or do we realize re-engagement of this to be the leading edge of music? The listener is on some level apprehending and participating in the entire generative activity of the composer and performer: their embodied process, before/during/after performance. This is what is actually “being produced and understood”, and is best understood as a generative activity in the realm of vibrational unfoldment (in a broader interpretation of that word than merely the sonic) that is being enacted/exogenated through the bodies of the participants (listener/performer/composer) and the extensions of their body which they choose to interact with (instrument, space, etc.).

Is the composer trying to reiterate and extend an extant tradition? Are they trying to discover musical coherency in sound derived from DNA? Are they trying to create by not creating at all, as in improvisatory settings where the performer intends to “get out of the way”, or in chance music? Are they attempting to embrace simplicity in a complex world, and embody that through form? All of these “intentions” will be found at a deeper level of inquiry to be rooted in a more

fundamental generative activity which is organizing their unfoldment, and will be apperceived by the listener implicitly; even if this is largely unconscious (a), it is essential to understand that everything that unfolds as interpretation of their experience will be an exogenation of this, and our reification of more top-level exogenations produces fragmented understanding.

Thus the listener is stepping into the cockpit, so to speak, with all of the other participants in the field of interactivity (composer, performer, etc.) and literally “going there” - not just going there, but co-informing the unfoldment, as well. As we have learned this “going there” is unavoidable in the process of art, it is essential; we cannot penetrate new regions of artistic expression (or more rightly denoted, new regions of consciousness and constituent coherence unfoldment exogenation) and share them without doing this. In the avante-garde, as highlighted before, it is integral for us to understand the import of this initial invitation - like Anne Sullivan writing “water” on Helen Keller’s hand, it makes communication possible – and ostensibly, understand the important of teaching our audiences how to listen. How to expand their ears. Only then can they come with us into the realm of musicking and consciousness we have discovered, and which we seek to share with them.

In reply to the neurobiological research on intentionality, and their conclusions: do we cease the inquiry at intentionality (just as we did at the conscious observer in action-based studies, and hyperabstraction in those studies) or do we go one step further and recognize that our conceptualization of the intentions of the performer/composer are themselves a reification of a much more fundamental

vibratory reality, a conceptual metaphor for its unfoldment? I am challenging neurobiology, like Alva Noë, to apprehend the full implications of their work, towards what it can unveil, and not to stop at veiled *a priori* assumptions: to inquire deeper.

Listeners experience not only our intentionality, but our embodied process, as well, through bioresonance; fundamentally, they experience or apperceive the generative activity which underlies, which animates all of these more superficial processes (intentionality, musicking, etc.). This underscores our response-ability to apperceive our own generative activity, as an unengaged embodied process will exogenate generative principles it is unconscious (a) of; spontaneous resultants will in fact be veiled mimesis. In neurobiological research this intentionality apprehension has been shown to be fundamentally embodied (Rizzolatti & Sinigaglia 2008), and bioresonant (as illustrated by the activity of canonical neuron function) in its constraints. Thus it is illogical to assume that this bioresonant function ceases at an artificial line (such as conceptual reifications, or intentionality, or the conscious observer [n]). When we eliminate atomization from our inquiries into the body and consciousness, we move into a whole new domain of understanding which can relate competently to the continuum/flux.

In addition to the intrinsic brain activity research cited earlier, we have, from another study:

“We conclude that the presence of slow BOLD fluctuations is unlikely to merely reflect ongoing changes in the contents of consciousness and may be related to a more basic principle of brain function.” (Boly et. al)

In other words, assumptions from observed evidence of being able to pin down the conscious observer in neuronal activity fluctuation were an instance of drawing correlations between unrelated activity²⁰⁷, and should consequently be reassessed. This is a perfect metaphor for the trend I am seeking to expose across disciplines, and should sum up a great deal of the arguments made thus far in this text; especially if we replace the word “brain” with “natural”. Our divergences from nature turn out to be our shame, and not our pride.

Based upon an error in interpretation, many modern neuroscientists are loathe to reorient their views. The dominant perspective has been predicated upon an atomized understanding of brain function - where discreet localities in the brain perform specific functions. There is some sense of communication and interactivity between them, but nothing near the degree of dynamism in interactivity that actually exists. It is basically an atomized view of interactivity. The dynamic view of interactivity is

²⁰⁷ That being said, I talk about the conscious observer (a) while advocating a dismissal of historical notions of, and especially reified concepts of the conscious observer (n). This is because, as we disentangle from the conscious observer (n), we allow for an expanded and more potentiated set of competencies to emerge that are rooted in the conscious observer (a) as an interactive unfoldment that can never be pinned down in a small sub-set of brain function. In other words, when we disentangle from the explicit activity, the implicate activity is apparent, and this has ordered my processual unfoldment in this text.

relevant to the continuum/flux, which the brain operates in, and which music operates in, as well. Therefore, to the degree to which we operate under a similarly atomized view of interactivity in music, we will run into a similarly fragmented understanding.

Interestingly, Hans Berger, who discovered/invented the EEG, made it clear in the early 20th century that neurological activity as observed represented an unbroken stream, and not atomizations of such (Raichle 2010). Unfortunately, the fragmented view outlined above was pursued doggedly notwithstanding; assumptions about the conscious observer were enacted as *a priori* assumptions unquestioned, framing the experimental enactments, and thus the results as well. Our musical enactments can also be “framed” if we do not inquire deeply into our *a priori* assumptions – which, as mentioned previously, will veil themselves as the *a posteriori* until our embodied process penetrates this veil.

“...Americans ...include more silence in their works....inherent silence is equivalent to denial of the will.” (Cage *Silence* 53)

When experience is understood to be interactive and interdependent, identity ceases to be atomized, as well. The embodiment theories of Merleau-Ponty, as well as those which have emerged from neurobiological research, as well as from the work of Lackoff-Johnson and Varela, unveil a cross-modal emergent stream that is isomorphic to and intrinsically compatible with the interactive, systems based analysis of musicking and consciousness presented herein. These all invite a reorientation of the generative source of art: the actor, from a noun to a verb. From a localized phenomenon to a simultaneity of local/non-local phenomenon.

If there is a cognitive approach which I align myself with nearest, it is enactivism. The cross-modal quality alluded to above is embodied by the work of Alva Noë, a philosopher, whose empirical insights have been invaluable in numerous collaborative research projects with neuroscientists critical in developing the modern enactivist approach. His unique empirical insights have thus triangulated with intellection towards a broader and more rigorous knowledge base that has informed the competency of this theory. The revolution of enactivism is that it locates the complete function of the neurobiology trans-neurobiology – in dynamical interactivity - and in so doing will be seen to be integrally compatible with the musical and systems analysis' herein.

Enactivism argues that humans build a perceptual universe through action²⁰⁸, that this is an inherently participatory process, interactive with the environment, and that this interactivity is marked by “sensorimotor dependencies” (O’Regan and Noë) (Noë) (Degenaar. and O'Regan) These form through interactive unfoldment in relation to the environment and the constraints of the instrument; the body, for example, is not capable of reaching to the top of a building and plucking a flower from a garden there while standing with its feet firmly on the street below, but it is capable of reaching several feet up and grabbing a mug from the shelf. Thus, the range of interactive possibilities represents a field of constraints within which this

²⁰⁸ Nerves that fire together, wire together. And if we can construct it, we can deconstruct it, as well.

perceptual universe is built in dynamic unfoldment; it is intrinsically defined by the body and its particulars as they relate to the environment. The enactive approach can be usefully paired with our inquiry into listening, and extended into the multi-dimensionality corroborated empirically: just as “...we perceive in an idiom of possibilities for movement...” (Noë 105), we perceive music in an idiom of possibilities of listening.

As the body enacts various actions, it builds a perceptual universe that it then inhabits; so perception is argued to develop and unfold, and thus be inextricable, from environmental interactivity. It is not a disembodied field (as consciousness is sometimes conceived as); it is a field defined by the instrument. One will note the immediate analogues between instrumental constraints in music (such as range, timbre, breath length on wind instruments, polyphony on the piano, etc.) that create a similar set of sensorimotor dependencies. I cannot ask a single performer to play a 27 note chord on the piano, unless they are a cluster of neighbors - a composer must learn to navigate these constraints skillfully or they will be nothing but a theoretical composer; they will create compositions, but these will never be performed (they have metaphorically asked the performer to pluck that flower from the roof.) In fact, a composer is often engaged in enacting performative unfoldment's she has no experience with other than in her bioresonant imagination. Similarly, a human must develop sensori-motor competencies bioresonant to the environment to function coherently; this is illustrated by our example earlier with autistic individuals.

Enactivists go onto argue that this interactivity is so interlinked and inextricable that to conceive of perception and experience rooted in an internal representation separate from sensorimotor dependencies is untenable; rather, they conceive of perception and action as one whole, as illustrated by the interactivity outlined above, and experience as rooted in the bodily engagement itself. Not in a disembodied actor. Hence Noë's book title "Action in Perception", which seeks to unite any sense of dispartateness therein. One will note that MNS research, as well as canonical neuron research, supports these assertions; enactivism is a monumental leap forward in our understanding of cognition, and is commensurate with phenomenological approaches, as well as the encouragement to re-engage the continuum/flux – it frames the possibility of consciousness being found in the interactivity, and not in "the thing".

From this perspective, all of our perceptions of "nearness" and "farness", "highness" and "lowness", etc. spatially are formed in relation to the body and its integral interactivity with the environment. If my arms and legs were longer, I would then theoretically perceive spatial relationships differently, as my experiential unfoldment would have been in relation to the constraints of this new limb length. Similarly, all of our perceptions of "high pitch", "low pitch", "loud sound", "quiet sound" are formed in relation to the body and the environment, as well – through the many-layered recursive dynamical system of unfoldment illustrated in our tabula rasa exploration, our attentional exercises, as well as our neurobiological inquiries - everything we have been exploring throughout this text.

To go a little deeper: the shape of the ear (and range of vibrations the cochlea responds to) is going to have a dynamical relationship with the acoustical environment that creates similar constraints to the sensorimotor dependencies described above, and further defines how we relate to certain vibrations and vibratory unfoldment's. Thus bodily engagement is crucial to musicking. If the ear and cochlea were somehow a different size and shape, our experience of sound would consequently be different; this is implicit. This process in turn comes into interactivity with other body processes in integral and yet to be explored fashions; the inquiry soon becomes infinitely complex, as any dynamical systems does. We can begin to hypothesize and explore rather freely: it is possible that the shape of the skull will constrain certain vibrational patterns to aggregate more dynamically with the ear in idiosyncratic fashions that become part and parcel of the implicit apprehension of these wavelengths or timbres, and become correlated to perceived meanings; whether these are sub-lingual or conscious in impact does not in any way alter their efficaciousness. We must remember that, due to the butterfly effect, even small perturbations in a system must be considered in relation to the impact of recursive processes in iteration (Lorenz 1972).

Possibly vibrations the size of the adult bodies average height will elicit certain bioresonance patterns which come into interactivity with the cognition of that

wavelength occurring between the ears²⁰⁹; further we can explore how various local entities in the body (the liver, the chest cavity, the throat, etc.) could be explored in similar interactivity. Soon a dynamical map of these interactivities would lead into an exploration into the resultant geometries of their interactivities, and the isomorphisms between vibratory activity, musical perception, and musical experience. This map is in fact already built, inside our nervous system, through our own enactive engagement with the continuum/flux, and read through our bodily engagement.

The body, consciousness, and life are all intrinsically bioresonant. This quality encapsulates the generative activity of the implicate and the mutagenic, and further points to the true creativity and intelligence of the organism. When we enact the bioresonant intelligence of the body, we are simultaneously enacting a return to the continuum/flux.

I do not believe, as many of the enactivists do, that the source of experience need be absconded from internal representation and awarded to sensorimotor dependencies²¹⁰. These two activities are neither incommensurable, nor exclusive.

²⁰⁹ One will note that the average adult will be as tall as a wavelength roughly between 150-220 Hz, which is a fairly centrally located range in our overall pitch perception. This may hold some vital clues to our perception of bass sounds, which are generally lower than this. Further, I believe it is no accident that of all of the vast wavelengths in this universe, the human ear happens to perceive the range that intersects with its body size.

²¹⁰ In fact, I believe many modern proponents of the embodied approach go too far and make a fetish out of the body, and experience. Neither empiricism, not

They are in intimate interactivity, and the “source of experience” includes both, and is also prior to both in terms of generative unfoldment. It is the elusive underlying generative activity mentioned throughout this text; furthermore, the assumption that the ‘source of experience’ is the source of consciousness is a rather weak and tenuous one, suspect to inquiry into ‘the framer’ of the assumption.

So we must become very precise about defining the scope of internal representation and sensor-motor dependencies; the former points towards intrinsic enactment apperception and the bioresonant laboratory of direct experience, as well as imagination and the noumenal: each is simultaneously as ephemeral and as useful as we make them. Enactivism points towards the body, its interactivity with the environment, and a perspective that escapes prior atomizations, but can also make of the body, and experience a fetish – an absolute just as atomized. We need no fetishes: these represent points where processual unfoldment has been arrested into *a priori* assumptions. When all fragmentation is removed, we arrive at an integrated view of experience as unfolding process: experiencing (a); music teaches us this through its very processual unfoldment.

intellecion are ends in and of themselves: they are tools, to be used, and not to be used by.

Dynamical Listening Observations

In pendulum music, rainforest, and other constructed musical environments that produce music automatically, there is a sense that the composer is the cultivator of their own “miniverse” - an enfolded universe whose unfolding is coherent because of the construction of symbiotic environmental constraints or interactivity between various interrelated CDS'²¹¹ within the larger whole as a 'supersystem'. In pendulum music, the dropping of microphones is tantamount to setting the initial conditions of the system, and then sitting back and watching them unfold; this is further analogous to some of our attentional exercises wherein an initial attentional activity “seeds” the system; we then do our best to get out of the way and watch “what happens when _____”.

Seventh attentional inquiry

1) (2-3 minutes) Find a comfortable sitting position and ensure that the body is relaxed. Become aware of the sounds around you in your environment. Consciously drop expectations, judgments, and pre-conceptions about sound. Simply allow sound

²¹¹ As an example of the levels of interactivity between CDS': in Pendulum music you have 4 CDS' in the form of microphones, 4 in the form of speakers, a sound system which is definitely a CDS, an acoustical space, each listener, and the performers who initially drop the microphones, as well as the cables which swing the microphones, just to lay out a simplified analysis of what is, as has been stressed throughout, an unbroken continuum in nature at the level of the implicate exogenated in explicate form in a compositional setting.

to be as it is. If the mind becomes distracted, whatever the distraction is, do not push it away or give it unnecessary attention; simply allow the distraction to be, as well: gently bring awareness back to sound, continuing to allow it to be as it is.

2) (5-10 minutes) With your eyes open, shift your awareness to the inquiry: “What is it like to look out at a complex dynamical system, from within a complex dynamical system?” Once again, do not try and answer it through the mind; instead answer it through the body, through the felt sense: through **bioresonance**.

3) (5-10 minutes) “What is it like to listen to a complex dynamical system, from within one?”

COMPLEX DYNAMICAL SYSTEMS

CDS’ are a wonderful study because literally everything is relevant laboratory material. Everything we’ve examined so far: the imagination exercise in tabula rasa, neurobiology, etc. is a complex dynamical system. Every attentional exercise is a complex dynamical system; like a musical composition, they are a score for a CDS (attentional activity) that is itself a CDS.

‘Complex’ dynamical systems are actually a rather trivial, or simple affair to understand as a result, as they may be understood implicitly, rather than explicitly. They are infinitely interactive, constantly changing, unfolding process in activity. One merely engages with one, and it reveals itself in the continuum/flux of that inter-activity. A musical composition may be one of the best illustrations of CDS’, as may

any attentional activity:

Listen to a ‘familiar’ sound until you feel you’ve never heard it before. Now repeat this with another sound.

This simple attentional exercise, or musical composition, creates a CDS with intricate recursions between memory, attention, assessment of ‘newness’, etc. Clearly, even simple systems are complex, a fact that will become extremely significant in this chapter. Every single attentional exercise we’ve engaged in this text is complex to a degree difficult to appreciate, and which ‘simplicity’ in the realm instructions are irrelevant in regards to.

When asked to teach one of Ralph Abraham's Chaos and Fractal Art classes at UCSC, I illustrated this ‘complex concept’ by inviting students to perform an adaptation of one of Pauline Oliveros’ pieces:

Please perform one of the two following activities at any given moment:

- 1) Listen for a new sound, and repeat it.
- 2) Make a new sound.

One can imagine the unfoldment in the acoustical space: one student makes a new sound, this is mimed (but never precisely) in a wave of spatialization which follows a delay pattern concomitant to attentional limits (so fairly fast, but not instantaneous); it is like Ligeti’s clusters from Lux Aeterna at some moments, a sort of suspended animation, and at other moments it forms quickly cascading waves: the new and the old are unfolded in a musical fashion that is organic and unpredictably. A

sort of dynamical intelligence seems to emerge naturally from this very complex system.

After performing this for several minutes, the students experienced implicitly its generative unfoldment, and the degree of necessary intellectual ‘framing’ was exponentially decreased. I said “that was a complex dynamical system”, and it was so self-evident that everyone got it immediately. A concept understandably, but perhaps artificially, complex, became obvious, simple, and concrete. Complexity in unfoldment does not have to translate into complexity as confabulation; there was no need to explain to the 40+ undergraduate students that recursive feedback in attentional and vibratory patterns in interactivity created the unfolding activity of the system; it was implicit in the unfoldment itself, just as it is in all musicking. We could then go on to talk about these subjects using this experiential base as a ground, rather than spending 45 minutes creating an awkward and difficult frame for the subject, one which would invariably expose its own ‘framing’ and break down at some point.

When I shared my work at the DL Art/Science conference the first time around, I used the same illustration; it worked just as well with adults as it did with college students. Of course these were adults motivated to engage the embodied process deeply; it further served to illustrate my educational methodology, as the title of the talk (given within the context of a round-table discussion on education) was embodied experiential metaphors. This methodological approach involves facilitating a dynamical environment for the student to interact with as a living metaphor for the intellectual content being explored (not a reified one, an unfolding one); thus it is

synonymous with music, and this is why a composer is presenting it. Only “intellectual content” can be replaced with what we will come to understand as “coherencing”.

The interactivity which unfolds implicitly in this living metaphorical environment (or ‘metaphoring environment’, in contradistinction to ‘reifying environment’) illustrates the content infinitely more skillfully than is possible through atomized intellection alone, by the sheer scope of placing complexity (human body as CDS) in dynamical interactivity with complexity (the dynamical system created). Quite simply, rather than teaching a subject through the “framing of it”, we create a situation where it reveals itself through unfoldment in the continuum/flux, and then discuss it from there, using said interactivity as a contextual ground. We cut out the middleman, which is our own abstractive processes²¹².

So essential to note is that attention is always an element of the bioresonant laboratory of direct experience (in which this instrument is employed; thus, until one has mastered the interactivity of it, one’s data will never be trustworthy. It will always be filtered through a glass darkly²¹³. This laboratory always has attention and the

²¹² This educational approach is categorically not merely inductive as this is traditionally conceived; the inductive is still generally rooted in an atomized view of interactivity, and not a dynamical one.

²¹³ One may argue “but it is always filtered anyway”; however, the embodied attentional inquiry capacitates one to be in conscious engagement (rather than unconscious (a) disengagement) with that filtration, and this makes a world of difference.

body present; there are no exceptions to this. Like the observer/observed phenomenon relayed in physics experiments, the results will be colored by the presence of attention. Thus I believe that the mastery of placing the attentional gaze upon the ‘state space’ (as opposed to being organized by the ‘state space’) and observing how attentional directives create dynamical resultants therein facilitates the artist being in a place to render truly profound results; they become masters of the dynamical system which produces all musicking.

In other words, one must allow the CDS to unfold in its activity; like a musical composition, this is the only way it reveals itself. It’s the only way it can reveal itself. Our judgments, pre-conceptions, and filters in regards to music will color this process to the degree that we can never understand what could have unfolded otherwise, unless we cultivate the capacity to allow this unfolding to occur unhindered²¹⁴.

²¹⁴ Schopenhauer and Husserl understood this, as the methodological transformations of their work illustrates (as discussed in the Introduction of section I); Oliveros understood this, as her emphasis on hearing v. listening (Oliveros *Deep* xxii), and as the processual unfoldment of her work illustrates (also discussed in the Introduction of section I); in fact, it is implicit in the historical gestures explored throughout the Introduction to section I, and the theme of methodological transformation brought out therein.

It is the opinion of the author that it is further illustrated in this entire text, both through methodological application of the attentional inquiries and other processes in the unique idiom presented, as well as through the intellectual discussions and arguments articulated. The opinion of the author goes further to contend that the list of intellectuals who have penetrated this arena has grown and grown as the course of history has unveiled the circus we find ourselves within perceptually, and the intelligent have made their way out.

In terms of our attentional inquiries, this becomes highlighted even further: if one wants to discover what happens when one allows sound to be as it is (what happens when we allow that score to unfold), what happens when we drop our conceptual filters, what happens when we pay attention to silence, etc. One will not actually know unless one has reoriented the attentional faculty and done a proper experiment, and allowed it to unfold.

All of nature as she surrounds us, as well as the human world in its abstractions of her, are dynamical system in unfoldment; in their morphologies, their isomorphic patterns, lie the actual communications of nature: her natural lexicons which inform the superficial, the apparent, and the observed. Clearly the implicate principle becomes re-implicated here: as one is present within 'it', 'hearing out' of it, all of the time. Therefore, to understand CDS', disentangling from *a priori* experience 'within' them must be addressed simultaneously with intellection, and we have reinforced this throughout, as well as attempted to build an understanding of the *a priori* and the *a posteriori* that highlights the problem: *a priori* assumptions unconscious will masquerade as the *a posteriori* in defiance of all but the most sincere inquiry.

In nature, we see enfolded layers of self-similarity which constitute the fractal architecture Benoit Mandelbrot spoke of. These are not self-same-ilarity - they are self-similar-ity. When looking at a generated computer fractal graphic, it may seem that the images are the same at every iterative level. But the nature of complex dynamical systems is to defy the models we make of them – including our perceptual

reductions - in the morphologies of a leaf, or a coastline, there is infinite diversity, as well as infinite similitude - this is the miracle of nature; it is also her intrinsic intelligence. If we see a video of 5 cats following a laser with their eyes, they can appear 'the same' from the purview of our built perceptual universe. At the level of systems, and the continuum/flux, they are infinitely different. So self-same is a cognitive reduction of self-similarity; made out of what is in unfoldment.

Similarly, (no pun intended), a computer fractal graphic program is a model of a system which is itself a system (sound like our MNS?); the code is unfolding within a larger software and hardware environment (which is like the environment created by performing Pauline's piece in Ralph's class; which is more complex?). It will load at different speeds every time, it will crash at others, there will be unexplained hardware flickers, etc. in dynamical relation to that unfolding environment. Even the most advanced equipment experiences fluctuations; these are resultants of the dynamism of the system. As mentioned before, the illusion is that mechanical engineering has mastered nature, that we have come to a pinnacle of 'progress' and our constructed systems are a miracle, and a monumental achievement; in fact we have merely constructed intricate compensatory mechanisms which are biomimetic to natural systems (including our own filtrative systems), and it would be wise for us to be more honest about this fact.

Self-same-ness is one of the most insipient illusions of morphoteleosis, one that keeps us recursing in tiny and destructive cul-de-sacs of consciousness expression. That we could ever make something in our own image is a delusion

rooted in veiled cultural mythologies. Even if we tried, the actual unfoldment would inevitably be vastly different and creative intrinsically – a resultant of infinite recursive processes, and their subsequent chaotic properties. The failure of communism should be a historical illustration of this²¹⁵. There is a fundamental bioresonance that the illusion of self-same-ness is in distinct denial of, and which CDS' illustrate through their unfoldment.

Even the most conservative musician recognizes self-similarity in their work; the tradition of score-to-performance would seem to be one of self-sameness, but only from the most superficial purview. We all know that the most through-composed piece unfolds differently in the hands of different performers, in different acoustical spaces, for different audiences, etc.; a composer may say “that was the best performance of my piece” and about another performance “that was not so good” and in so doing reveal this self-similar nature of the unfoldment of musical works. It's never the same. In self-similarity, we can only talk about similitudes and differences, never sameness, and the exogenation of this generative understanding becomes

²¹⁵ In making this observation I would like to distance myself from any correlation between Marxism, and communism, which never actually enacted Marxism (as a larger embodied experiential metaphor) to the degree necessary for us to understand its potential viability/non-viability. I believe Marx may be one of the most maligned figures of the last couple hundred years, and feel inspired to make this distinction clear as a result.

processually vital as our discussion expands from generative activities, to their resultants: to their implications.

Sameness is akin to thingness - an ontological habit that, in the blindness of our morphoteleosis, we have reified. To make real is not to be real, and progress only occurs through lucidity and honest inquiry. Neither our things, nor the stark morphoteleosis of the self-same attractor at the center of the system, actually exist. In the continuum/flux of life, they are passing apparitions that have sought to momentarily self-valorize into a sort of frozen ontological absolute, a sort of caricature of eternal life. Only coherency absolutes exist, not ontological ones. I will outline what I mean by this in the next chapter.

In terms of systems, we must outline what we speak of when we talk about attractors. These are areas in the system where energy tends to flow, where activity tends to recurse towards. In a topography, a river is a hydrological attractor: the water tends to go there. In mathematical systems, numerical resultants consistently return to that location, even with disparate initial conditions. So 'sameness' can be described as an ontological attractor; whether or not we use that word, there is an activity of consciousness that habitually returns to that location in the system, primarily unconsciously (a).

This can also be spoken of in terms of runnels and chreodes; these are descriptors of unique morphologies of attractors, as outlined by various authors²¹⁶. Sheldrake has pointed out that these constitute the habits of nature that are further analogous to our own habits, as they emerge in neurobiology (Sheldrake, Abraham, McKenna 44)²¹⁷. Nature as we know it, for example, has a habit of forming carbon-based life, of DNA recursion facilitating the formation of said life; it has a habit of forming hydrological systems, etc. along with her novelty there are also consistent themes. These are attractors, consistent phenomenon in the system, natural theme and variation if you will.

Neurobiologically, the concepts of runnels, chreodes, and attractors are mirrors of nerves that fire together, wire together: those activities that we participate in, create habits neurobiological. Simultaneously they do the same in the morphogenetic field²¹⁸. For these are not separate. Sheldrake has even gone so far as

²¹⁶ Waddington, for example, coined the term chreode.

²¹⁷ And that may or may not be reinforced by MNS activity; this is an active inquiry, and certainly one that serves to reorient basic assumptions about the function of that system.

²¹⁸ Because they are enacted outwardly, they produce runnels in the larger dynamical system concomitantly with doing so in the local one; the body.

The morphogenetic field is simply the field of quantum information: it is the field of vibratory geometries, which extends beyond the human domain to include all of nature. So while we may think of it primarily in terms of human ideas, actions, etc.

to describe these as “basins of teleology” (ibid.), which highlights the analysis of morphoteleosis as an attractor, and as being an essential phenomenon to be deconstructed, as it has been herein.

This can then be meaningfully placed into praxis with action-contingent MNS activity, as well as canonical neuron activity, and the inquiry into the degree to which we are a product of our conditioning, and the degree to which we may foster a ‘beginners mind’ in relation to our built perceptual universe (especially as musicians) that in turn cultivates creative fermentation. Therefore, to somatically distinguish between activity that is morphogenetic habit, and that which is not, is concomitant to psychological freedom within that built perceptual universe.

Creative works, and systems in general, have an appetite for completion – like a sound wave, which possesses attack, sustain, and decay, there is a life-cycle²¹⁹ unique to the particulars of its internal geometries. This life cycle, no matter what the scope of the system, is impelled towards completion. This points towards the form- genesis of Stockhausen; in a broader temporal span than a single sound wave, there is an activity of self-organization that congeals into musical form. It is a vibratory

it has a substrate that extends much deeper, and the analogy with the conversation about neural substrate/conceptual reifications and their hyperabstraction applies here, as well.

²¹⁹ These refer to the more fundamental vibratory processes, and not superficial ones; in regards to more superficial ones (like psychology), they apply in that they outline the vibratory processes which underpin them, and thus will still exhibit idiosyncratic isomorphisms to this phenomenon.

organization that is implicit, and which emerges through process: which is discovered, not done. It is contradistinctive to form-genesis as a psychological process, as an intentional activity of overt organization and control, which also occurs within a CDS, but with a different generative activity. Form-genesis as Stockhausen discusses it is an emergent phenomenon.

What is implied and revealed in the particulars of unfoldment are the clues along the way which give rise to its realization, whether we are talking about form (as above), or improvisation as a microcosmic order of the same process. The vibratory activity of systems is to re-cohere and reorganize constantly, into higher and higher orders, even if this includes intervals of dissipative order facilitating this as part of the larger movement. The psychological is an artificial form-genesis; a need, a want, a self-same attractor. It too, operates as a CDS; however, the morphoteleosis inherent in it creates mimesis, and not the creative ferment of the bioresonant; tragically it staves off the leading edge, and any creative activity which broaches it, in favor of its own self-perpetuation.

This appetite for completion unfolds in variegated systems contingent upon the generative activity animating them. A simple sound wave, emanating from my throat, has exhausted its life cycle before I have uttered the next sound(ing). A musical composition may have a temporal span that extends beyond a human life (John Cage's *Organ²/ASLSP*); it may also have one shorter than a human breath (as in the composition that was dreamed of, enacted in the internal laboratory, but never pursued).

A tonal musical composition may be understood to have an appetite for completion (in the realm of perception) corollary to the tonic. A serial composition may have an appetite for completion (once again perceptually) corollary to the exhaustion of the material; of its potential unfoldment's. One can immediately see the connection to intrinsic enactment apperception with each. The avenues of analysis from this frame are infinite, and will unfold more deeply in the next chapter; we must understand that it is the underlying vibratory processes which animate neurobiology, artistic process, artistic experience, culture, tradition, etc. and which have an appetite for completion (and that these examples [Stockhausen's form-genesis, tonality, seriality, sound waves] all represent superficial expressions of) that we are actually talking about, in the end. Until we address processual completion at this level, the morphoteleological is operating to a greater or lesser degree at a top-level expression that is, hyperbolically (to the purview of the conscious observer) animated by this underlying generative activity, as an explicate expression of it.

But to complete the thought, we can see examples of appetite for completion operating in a dissipative structure approaching a new state transition, a new order of organization (such as when a cymatics plate shifts patterns); we can see it in tonality and in seriality, as well as in performance art (where the appetite may be to complete the unfoldment of an exposed field of social novelty to exhaustion); we can see it in psychological systems (where the appetite for completion may be to satiate a 'want' or 'need'), etc. And I encourage us to inquire deeper and unveil a

more fundamental order of self-organization which has an appetite for completion, and what that would 'look like'.

I have coined the term self-same attractor to highlight the illusion of morphoteleosis enacted in the human organism - conditions notwithstanding, energy in the system flows consistently to 'me', 'mine', etc. In terms of creativity, it is: 'I' created this. This attractor naturally seeks to perpetuate itself - this is the self-same quality. It is itself in contradistinction with the very laws of nature; in other words, if the conscious observer really apperceived the self-similar as opposed to self-same nature of systems, and thus of reality, the morphoteleosis of the self-same attractor would dissolve – as well as the illusion of sameness. The self-same attractor tends to do whatever it can to veil the conscious observer from this reality, including constructing a filter across which 'unconsciousness' (n) lies (therefore making it the 'experienced real'), etc.

Emergence is the phenomenon by which new patterns arise from the activity of the system. It is not completely understood, or rather it may be more accurate to say that we continue to understand it more in unfolding process, that it is an emergent phenomenon itself, as it relates to the very nature of complexity. In our attentional exercises, our experience is an emergent phenomenon of the system. Consciousness can be argued to be an emergent phenomenon; the 'epiphenomenon' argument is a superficial example of the deeper recognition that, from this perspective, consciousness is potentially an emergent property of the dynamical system we call nature.

Complex dynamical systems further exhibit chaotic phenomenon: wherein a system in which all of the elements are understood, as it passes a certain level of complexity, produces phenomenon that cannot be explained or modeled, even though logically its activity 'should' be predictable based upon these known elements. These are what are called chaotic resultants. In fractal mathematics, the discovery of chaotic attractors – which exhibit the properties of attractors mentioned above, in concert with this chaotic phenomenon – is one of the most exciting recent discoveries, as it, like Anne Sullivan's tracing of 'water' on Helen Keller's hand, opens up whole new realms of inquiry. They are runnels, or chreodes, to which activity flows but we know not why from our purview; they reveal the hyperbolic constraints of our own *a priori* assumptions, invite further inquiry, and are exciting to those who love to have their constraints revealed.

It becomes difficult at a certain point to distinguish between emergent phenomenon and chaotic resultants; this is in turn inextricably tied up with these constraints, and our conscious purview. To continue this thread, emergence is a rather remarkable and important phenomenon - from the activity of a dynamical system emerges a whole new order of expression. It emerged from within the ferment of that activity, not the interjection of an outside force. It is not a passing phenomenon - new coherency patterns, an unfolding activity of coherencing, idiosyncratic attractors, all form within its activity. We may see this illustrated in the unpredictable musical resultants of the Oliveros piece alluded to earlier in this chapter, as well as in the state

transitions of a cymatics plate (as can be viewed in the many excellent videos documenting this phenomenon, and readily available [Jenny]).

Emergence is seen to be at play in phenomenon of many temporal and spatial scopes. From the purview of the conscious observers, this may appear as the avante-garde, as indeterminacy, as the birth of a child, as the advent of a creative idea/concept, as war, as a television show - as any phenomena in nature that emerges from her as a dynamical system. It is the self-similarity of the system, observed from within the system, unfolding in infinite diversity, while simultaneously in infinite similitude. Self-similar in generative activity, but never self-same, and thus in infinite and interactive relationship with said observer. One could even argue that no cognition could ever occur without this.

In ethnomusicology, we have watched the territory of the self-same attractor unfold rather dramatically. When an organism holds a certain generative principle in consciousness, this acts to influence the entire unfoldment of the perceptual universe they inhabit, as well as their interactivities with other CDS', as their enactments will be framed by it. Early American colonists, as well as individuals enacting a colonial mindset historically, coming from the perspective of the self-same attractor in the dynamical system, could not experience the 'other' in any other way than as a deviation from their self-same norm. And that is exactly what they enacted.

If they understood self-similarity, and oriented their generative activity thus, the 'other' would be no problem. The recognition of diversities and unities in relation to self and other is a rather simple existential affair, but not when the generative

activity of the self-same attractor dominates the system to its exclusion. Because of the morphoteleological impulse to conform everything in the system, violence towards the other becomes an inevitable resultant. We see this unfold in music, as well: from our ethnomusicological past, to our canonically troubled present, the attitudinal adjustment from self-same to self-similar constitutes the difference between the enactment of implicit cultural genocide and degradation, to the enactment of implicit cultural collaboration, mutual respect and support, and coherent dialogue towards new modes of sustainability; this holds true whether applied internally, or externally, as these are isomorphic in an interested systems view. One can further observe that morphoteleosis points towards the mimetic appetite for completion of the self-same attractor, and also the inherent impossibility of its resolution, as self-sameness will remain an unattainable fiction indefinitely.

The significance of fractals in the modern world, in terms of our ways of thinking about and engaging with the world, is difficult to underestimate. All of our modeling technologies, one might argue, are predicated upon a self-same paradigm - where one can model a system and usefully predict the results using atomized data.

Our understanding of systems, and fractals, completely decimates the illusion of this self-sameness. As mentioned before, if one looks at complex mechanical engineering, it is based on intricate compensation designs in interactivity with a dynamical environment, not exact unfoldment of a static model, as superficially and popularly perceived. These compensation designs mirror the filtration system of the

body and are essentially biomimetic; others have observed the degree to which our design systems are already such (Benyus).

Examining the unfolding process of musical composition alluded to above illustrates the properties of complex dynamical systems further. Inherent to a dynamical system is this property that it is impossible to model or predict; when we understand even apparently simple systems to be such, it changes the way we look at art. Complex score/simple score, for example, does not translate to complex music/simple music; one must contextualize them within their unfoldment in the continuum/flux, and therein lies many surprises.

As an illustration, imagine a musical composition with two notes played on the piano “simultaneously”; middle C and the E a major third above. These are held for as long as possible, and then the piece is complete. It’s so “simple”, I can describe it with a few sentences of text; I don’t even need a staff.

From the outside it does appear “simple”. A naïve observer may even assume it would unfold the same every time; yet even a superficial examination will reveal this to be near-sighted. The particular microacoustic details, in addition to interactivity of these with the acoustical space, attack onset, amplitudinal differentials, etc. will always unfold idiosyncratically: this diversity is infinitely complex in the continuum/flux, which ‘knows nothing’ of notions of complex/simple as they relate to score, psychology, and other human abstractions, representations, and reifications.

In the realm of ‘score’, this piece may appear to be a predictable system. But in actual unfoldment, in the continuum/flux, it involves interactivity between the acoustic space (a dynamical system), the performer (ibid.), the instrument (ibid.), and listeners (ibid.), etc. This interactivity (between systems which are already independently complex) adds up to an enormous level of complexity quite quickly. Furthermore, this interactivity may be analyzed meaningfully in terms of atomized systems, but this breaks down when placed against the actual unfoldment, and thus can only be applied as a metaphorical lens.

One can go further and reveal indeterminate possibilities within this piece that a first glance may have been overlooked: “held for as long as possible” may be interpreted in an infinite number of ways. This may mean until the performer has become bored, or until they need a drink of water, or until they have decided the piece should finish, at which point an arbitrary value judgment has been brought in (was that ‘in the score’?), which is not ‘bad’, but it is relevant, as it is inherently performer indeterminacy. A performer may even (theoretically) interpret this so literally that they never get up from the piano; if they can maintain key pressure post-mortem, this could presumably continue indefinitely, and John Cage would find himself with competition for the longest piece in history²²⁰.

Our misunderstanding lies in what is so near, that it has been placed behind a veil of familiarity; namely, our unexposed *a priori* assumptions. In bioresonance is a

²²⁰ Organ²/ASLSP

level of complexity which explicate process can never approach, as is illustrated by the properties of complexity observed in systems. Rephrased, complexity in interactivity is the complexity tables, lists, and ideas are signifiers for, and can never actually capture. Because we have experienced ‘great symphonies’, it is difficult for us to consider a two note piece ‘complex’, as we compare these and define complexity in relation to prior unfoldments (ostensibly experience, and theoretically, MNS activity), rather than the interactivity immanent. When we approach complexity via comparison (in this fashion), we inevitably confront the artificial limits of the self-same delusion at the level of the generative; when we approach it through direct bodily engagement, there is no glass ceiling; infinite complexity is not an unattainable absolute: it is an immanent reality, as near as reaching for a glass²²¹.

Cognition is fundamentally predicated upon sublingual assessment of similarities and differences, importantly through bioresonance, and not a virtual cognizer sitting at an internal tally board. When these similarities/differences become misapprehended as absolutes somewhere along the neural signal chain, their informatic value is lost: the system becomes incoherent, and creativity is hindered. Their self-similarity has become reduced by the delusion of the self-same generative activity. By comparing our two-note piece to a symphony in the interest of forming a

²²¹ As even this ‘simple’ act involves dynamism of infinite complexity in unfoldment, it will be more complex than any model can account for.

judgment, it appears ‘simple’, and inquiry may be ceased as a result; the difference between a living inquiry, and a dead one, is tantamount to the same in musicking, as well as in tradition. It must, like a flame, be kept alive.

This further illustrates that ‘*a priori* assumptions’ refers to unconscious habits, or runnels in the system, (and not just quotable/reifiable ‘*a prioris*’ as ‘similarly’ outlined in our discussion of hyperabstraction and the neural substrate) and is thus privy only to those vigilant enough in said inquiry to never cease inquiring deeper. One tends to ignore the natural complexity of each of the constituent CDS’ in interactivity with each other (including us), on a day-to-day basis, not to mention the larger complexity they are exogenerations of, as a functional psychological adaptation. This reduction cordons our competence in regards to systems, and our interactivity with them, artificially constrained beneath a stifling threshold.

In mathematics, certain iterative systems are described as becoming chaotic (and thus complex beyond predictive capacitance) within just 2-3 inter-nested iterative processes, contingent upon the qualities of the iterative nature of the system. In each of the examples given a few paragraphs prior (reaching for a mug, our ‘two-note’ piece, etc.), the CDS’ in discussion are well beyond this level of complexity²²². The level of activity in the system habitually filtered (as a functional adaptation) may be usefully dubbed the intrinsic activity of the system; the brains intrinsic activity

²²² Just one second of unfoldment in one nervous system is, let alone a concert hall full of them.

illustrates the various qualities of this, and may be considered a model dynamical system for studying it.

Like intrinsic activity in the brain, intrinsic activity in natural systems has been functionally ignored in favor of observable action-differentials that reiterate the ‘reality’ of the conscious observer (n), the self-same attractor in the dynamical system, their interests, and the perpetuation of the shared built perceptual universe they inhabit as a member of society. These arbitrary filters become the dividing lines that inhibit truly creative scientific, as well as musical, research.

Once again, our filters serve pragmatic purposes, but they do not need to limit us in this fashion, and taking this by the forelocks is the vanguard of musicking, as well as ‘humaning’, in the 21st century. Dynamical systems are infinitely interactive at the level of the implicit and the bioresonant – entanglement is when this becomes extended into psychological process²²³. We are resourced biologically to confront this: true complexity; our attempt to construct an artificial complexity in the domain of atomization is tantamount to trying to recreate nature in our own image.²²⁴ This is illustrated by the intrinsic enactment apperception. So entanglement is to what ‘processually is’, as psychological filters in the sonic realm are to what ‘sonically is’;

²²³ Which, like our filters, is intended to serve a functional purpose, not become an end in and of itself: a cul-de-sac to become lost in.

²²⁴ And its’ processual conclusion will be the same.

each are in turn further analogous to extra-musical qualities, in relation to a piece of music: they can be useful until they are over-emphasized to a fault, at which point they can destroy the entire sonorous potential of the enactment²²⁵.

So even a simple piece is involved with an incredible level of indeterminacy beyond any attempts to reduce, control, explain, or understand it. The tiny variations in attack, amplitude, etc. mentioned above can be considered chaotic resultants of the system; they may also be considered emergent phenomenon. An unexpected resonance in the space may be considered either, as well. In fact, it becomes increasingly difficult to distinguish between the two precisely because the defining factor is our purview; it becomes even more difficult to distinguish whether they arise from a 'conscious observer', or not, at least if we have not clarified the (a) - (n) territory of this phenomenon; inevitably, inquiries into the larger field leave more questions than answers.

Because of the implicate principle, the conscious observer (n) will consider what is unpredictable to be chaotic resultant, or indeterminacy, a digression from the atomized order that it understands and believes to be true. Yet if we had an infinite purview, we could step outside of the orders of organization this is embedded within and see that every chaotic resultant can also be understood to be emergent

²²⁵ One could ask with each: are they extraneous to the maximal coherence potential of the dynamical system?

phenomenon of this larger organization, and the generative activity which fuels that activity. We would see the milky way. This is, once again, what is most exciting about chaotic attractors in fractal mathematics; they unveil a new level of organization that we may then pursue in intellectual inquiry. What appears indeterminate, may one day guide the unveiling of a new order of organization in the system, and our subsequent understanding of it; we must merely cease discarding what does not fit into our frame as irrelevant, as we are habituated to do.

This approach may be applied to chaotic/emergent phenomenon in music, as well: indeterminacy on a local temporal level is concomitant to an order of organization unobserved (more about this later) and may also be traced to the emergence of new forms, styles, etc. at a macro temporal level, if one engages in a broad enough processual analysis. Whether small or large, chaotic resultants are a fundamental property of systems that constitutes a praxis for deeper inquiry.

Duchamp is quoted as saying that the point is to be able to look at two coke bottles and see that they are two different bottles (*Cage From Zero* 6:30-7:30) – this is reminiscent of the MNS/canonical neuron praxis exposed in the previous chapter, as well as that of the direct experience, “what is”, the *epoché* of Husserl, etc. The implicate, embodied inquiratorial methodology herein is a means to realizing this end. As mentioned before, more rigorous neurobiological research will help to corroborate the territory observed implicitly more explicitly: whether a highly trained musician is relegated to becoming merely an “expert”, lost in his/her own runnels of recursion, or is capable of maintaining a beginner's mind and a sense of novelty in relationship to

that, and then: what does this mean to/for their musicking? Whether a listener is capable of being only a passive entity, or themselves are an integral participant – either by realizing this is already true themselves, or by being explicitly invited by the interactivity created by the musical actor, the embodied experiential metaphor, into a field wherein it is self-evident. The implications of this are (r)evolutionary.

In mirror neuron research, we have observed what has been extrapolated as a certain apperception of the artist's intentionality – that is, in the process of enacting all of the complex elements of the activity internally (via an intrinsic enactment apperception equally as intricate as the composers/performers), listeners are able to apperceive the artist's intentionality; to cognize it. Now let's look at what that intentionality really is from a systems view, rather than what it appears to be at a superficial glance; this will corroborate our earlier analysis more deeply.

Intentionality is usually conceived of as an activity enacted by an actor. In our more comprehensive analysis of the situation, we understand this 'actor' to be an activity unfolding within the larger activity of the rest of the field, the intrinsic activity – we understand conscious observer (a) to be truer than conscious observer (n). So intentionality is a reduction of a larger field of activity which neither ends at the 5% within our brains, nor at our skin. In fact, the audience member is apperceiving the very generative activity that the artist participates in, which umbrellas this much larger field of activity, even beyond what systems models can predict, and which can only be unfolded through direct engagement. Intentionality is merely a useful phrase for the facilitation of discussion; a metaphor.

Thus even a passive listener participates in musicking integrally in the apperception of the generative activity the artist exogenates; literally, what we create, recurses in the system. It becomes recursed inside of the audience's neurobiology, inside of ourselves, inside of our performers, inside of the tradition, creating runnels, creating habits in nature, etc. And this is how we competently change the activity of dynamical systems - we inculcate new generative activity into an already unfolding system, and then observe what happens. It is not a paradigm of control, but of influence. And the greatest influence goes to those who understand the activity of the apperceptive instrument; who furthermore do not fragment it, and allow that fragment to become a runnel of morphoteleological recursion.

There is then, one again, a certain ethics in art, but we must be careful in defining this. It is not ethics in terms of the traditional notions of that study, it is more of a vibrational ethics, pre-humaning. We must become aware of, and response-able for, the generative activities we recurse in the system, for they hold the key to what our actual impact will be (as opposed to atomizations of our activity reinforced by the built perceptual universe, and our assessment of artistic impact predicated upon that).

And exterior objectifications will always be reductions: as will, as intentionality, as a composition, as 400 Hz or 20 Hz, etc. - in each case, it is only the actual unfoldment that has substance, that could be denoted as reality (if reality must be signified). So the only way to know this generative activity is through the unatomized instrument, the unfragmented mind. Through embodied inquiry, directly, through our listening, and through a different modus of knowing than we are

habituated to in the dominant intellectual discourse, and in our world at large.

Otherwise we will never know what the impact of our art is; we will only gesticulate in relation to it. I feel I cannot emphasize this enough, and so I re-emphasize it at every opportunity.

So what is it like to look out at a complex dynamical system from within a complex dynamical system? One of the answers is that one understands that the activity of the system is animated by the generative activity at the source, and not at the tip. And we are looking out from the tip, to the degree that we consider ourselves to be a conscious observer (n), i.e. the 5%. Of course there is a dynamical relationship between these (source and tip), and through all levels of the system, and understanding this is key, but there is a fundamental way in which the underlying generative activity must be understood as it is if the activity of the system as a whole is to be approached rigorously, for it is this underlying activity which organizes the system, and not abstractions of such.

To continue our inquiry into complex dynamical systems further, and their significance in regards to musicking, as well as consciousness and other systems, let us return to chaotic resultants. In CDS' it has been observed that the whole is more than the parts; that even when all elements of a system are known, past a certain degree of complexity, chaotic resultants will occur that are impossible for models to predict. We've already talked about this.

Similar to the aggregation of attentional and vibratory patterns in Pauline's piece cited above, the neurobiology 'gains experience' and becomes what we call

'conditioned', it recurses in a generative process that reiterates and expands, like mycelial structures. It forms runnels. It is also like theme and variation; it seems that the hyperabstractive faculty is not an isolated phenomenon, but a mirror of other processes found throughout nature, which are fractal and interested. It in fact has chaotic resultants of its own dynamical processes: unpredictable results that no modeling can account for (why does one person like that composition, and not the other? Sometimes it can be reasonably explained, at other times not.). Like psychology. It is a complex dynamical system, an analogue to a musical composition, a musical culture or tradition, natural systems, as well as all other systems explored herein.

Each exhibits properties that have essential implications in relation to music, the creative process, cognition, and culture. In terms of attractors, we immediately see the tonal center, the dominant, and the sub-dominant are attractors in tonal music. We further see their integral relation to cognition in the context of the harmonic series, and natural systems.

We can then go on to see that various art musics hyperabstract this; that serial music generates (through habituation of the listener) new attractors in the domain of sonic unfoldment, that are then hyperabstracted. Participatory music's (like Fluxus, Sonic Meditations, and interactive art installations) create attractors not just in the realm of sonic cognition, but also in the realm of the participant's interactivity with the space, as well as in the realm of social interactivity; just as the enactivists describe sensori-motor dependencies, these are relevant analogously with any system, and its

attractors. Performance art may be understood through the lens of idiosyncratically manufactured sensorimotor dependencies within an unfolding embodied experiential metaphor.

To the degree to which an attractor (such as a tonic) is considered a reference point: is it attitudinally related to by the listener as an arrival point, as an end in and of itself, or as a praxis of inquiry, and facilitator of deeper entry? As an element in a perpetually unfolding process, which doesn't even end at the music? The difference is between artist as dictator of process, and artist as facilitator of process.

The interactivity of these complex dynamical systems is similar to the enfolded/unfolded order as described by David Bohm: Neurobiology as a complex dynamical system occurs in the body, a larger complex dynamical system, which occurs in a local environment, which is also a complex dynamical system, which occurs within a larger environment, etc. They are interrelated: the chaotic resultant of one are integrally linked to the "hidden variables" of the enfolded order, the order of organization in which it is nested. These are perpetually located outside of our conscious purview; thus they appear as chaotic attractors, even though they are emergent phenomenon at another level of the system.

The perceptual processes are engaged in complex recursive process' in relationship to musicking, to body states, to social conditioning and value, to preference matrices, etc. These comprise, as a whole, the laboratory of direct experience, within which the human discovers meaning, value, as well as everything

we contextualize as reality, whether conscious or unconscious. And, of course, music is included in all of this.

The embodied context becomes especially highlighted in the environment of these recursive processes. The sound of the mother's heartbeat, for example, would have generatively planted a seed that was subsequently in relationship to literally billions of such processes. So would any of the other ambient sounds of the internal acoustic ecology of the womb. That these would amplify their resultant impact over time is implicit; only through understanding their own internal context, in all its complexity, may the musician speak to that of the listener. Once again, this is done through unfoldment, or embodied inquiry.

Following from the previous discussion in *Tabula Rasa*, the associative matrix around sound continues to develop as social structures, language structures, and other human structures develop in parallel. As a CDS, made up of internal interactivity that includes all of these elements, this matrix recurses billions upon billions of times, giving rise to new resultants at each iteration; these then enter into the system as part of the next iterative cycle. Thus perception and attention is involved in a complex recursive process that is at the heart of the emergence of this associative matrix, and ensures that it is 'never not' in conversation with it.

As dominance hierarchies form in culture, various roles of musician and non-musician, expert and passive observer, etc. arise. As ritual and religion develops, musicking adopts a central place within this structure, and the abstraction of the direct experience it inherently mediates.

Sound, previously unmediated, becomes mediated and contextualized into various classes of meaning (music/non-music, beautiful/non-beautiful, etc.) that are both conscious and taken to be *a priori*, but mask sub-lingual assumptions. Just as the individual actor must contextualize themselves within this growing psychological matrix, so is sound mediated within it.

Social agreements about these classes of meaning become assumed reality; eventually there is no argument about what is music, or what is not; about what is beautiful, or what is not. Divergence from certain acceptable pathways are shamed or guilted into alignment with the larger creative stream of the dominant cultural milieu; this milieu serves primarily self-valorizing and survival based purposes; warfare and dominance, resource control, leader status, etc. all come into relationship with the activity of musicking. Musicking may seem, at times, as a socially enacted ritual, to be paradoxically primarily extra-musical.

Now, in the 21st century, we have the phenomenon of popular music, mediated and designed with all of the modern psychological and perceptual study in its back-pocket – 3 minutes to elicit attention in minimal doses, pre-cooked melodic and harmonic patterns that play the passive listener like a puppet on a string with tension and release designed to satisfy their most primal instincts of satisfaction, their biochemical factory implicit; dulling them to the realities of the capitalistic imperatives they have been made an instrument of, as well as to the full listening competence which is their intrinsic potential.

One will observe in musical education globally underlying isomorphisms of processual unfoldment; this is embodied by the guru/shishya relationship found in Indian music, and may be illustrated through it as a lens. The student, in some approaches, is allowed to play only one note for several years, until their articulation of it has achieved a certain *rasa*, which can be linked analogously to the concept of soul²²⁶. The teacher can presumably judge the emergence of *rasa* in the students embodied process because they have been oriented to this phenomenon inside themselves; and have further continued to cultivate it.

The guru proceeds from there to transmit various musical competencies (knowledge of *raga*, instrumental skill, etc.) which are predicated upon sensori-motor dependencies in the musical domain. These are explicate processes; knowing how, in Myrna Estep's terminology (Estep). *Rasa* is implicate; it points towards coherency apperception, towards the organization of said competencies by a larger order emerging through the organism, processual awareness, etc. *Rasa* organizes explicate processes, competencies in the human domain; thus, implicit intelligence without explicate intelligence can still function creatively, but explicate intelligence without

²²⁶ In its unified expression; 8 primary *rasas* are visualized in Indian musical theory, as well as a multiplicity of 'lesser' ones (as reported by Rowell [Rowell]) at what I would describe as the explicate level of consciousness, or life processes. In addition, it has been suggested that the 'many' arise out of one *rasa* underlying, thus forming a metaphor of diversity and unity, like implicate/explicate, that is inter-nested and dynamical.

implicate intelligence cannot: the enfolded order (the implicate) is what organizes the unfolded (the explicate), and thus without it in operation, the explicate is impoverished to a degree of virtual atrophy²²⁷.

A similar unfoldment occurs in all musical education, and this metaphor can be applied therein. Various competencies are transmitted, which facilitate functional activities of the organism (knowing how); these are organized by *rasa*, soul, coherency apperception, as the emergence of higher orders of organization through the dynamical system. Systems intrinsically move towards higher states of order – the chemical systems Prigogine and Rajagopal observed (Prigogine and Rajagopal 1980) corroborate this²²⁸, and we may either be in direct conversation with it, or abstracted in a veiled dimension of psychological recursion that is a veritable self-same attractor.

So a teacher may relate to a student from the alignment of a self-same attractor (intending to make the student a copy of themselves) or self-similar activity (a dynamical resultant of shared similitudes and differences). I have described above the ideal situation, one of self-similarity, where they foster the emergence of *rasa*: of a higher order of organization in the system, through the student. Where engagement

²²⁷ Of course if both listener, and ‘artist’ as commoodifier of sound are in this state, then mimetic exchange will be pleasant to both parties, as both have been inhibited from ‘knowing there’ to ‘go there’.

²²⁸ In addition, Bohm believed this (Bohm and Peat 133); I think a simple examination of our cognition of tonality points to this, as well. The system apperceives pleasure in the biomimetic representation of chaos (dissonance) resolving into order (consonance).

with the teacher is designed to orient the student to this activity within themselves. Sadly, much of musical education is predicated upon the self-same activity. Instead of orienting the student to soul, the teacher orients the student to themselves (n), the teacher. Instead of orienting the student to themselves (a), the student, they orient them to a noun i.e. a fiction around which they can orbit as a noun themselves. The difference between the resultant of an educational approach that exogenates self-same and self-similar generative activities, respectively, is that between psychologically mimetic intelligence, and bioresonant, implicit intelligence. Their unfoldment may be understood comprehensively through this simple lens, as have many other processes thus far.

As I compose music, I notice it is not the linear process it may appear to be; it is 'me' in interactivity with a multitude, actually an infinitude, of other systems; who is to say from whence an 'idea', or a 'composition', has emerged? I cannot even count the number of systems; they break down into an unbroken flux.

Algorithms provide a good metaphor for extending this conversation. The recursive process' we have tracked from our original savannah visualization have grown into a complexity we need new metaphors to address. As the student absorbs musical ways and means from his teacher, one may call these algorithms. The human organism has algorithms; various programs for function that I also categorize into biological and psychological in nature. The filtration of sound, as discussed so far, can be said to be a subset of the overall algorithmic function of the human organism.

As with filtration, biological algorithms are biologically necessary programs that sustain the coherent function of the organism. For example, when a human body moves from a hot environment to a cold environment, the hypothalamus sends biochemical signals to the exterior of the body to adjust bloodflow accordingly. Without these biological algorithms, healthy human function would be impossible, just as observed with certain sonic filters. They do not inherently abstract upon reality, although they do distort it to a minimal degree.

Psychological algorithms are a different matter, an expression of the constructed reality we have been made complicit to. They serve an end that is fundamentally psychological, by their very nature. Approval is an excellent example as it is something that only exists in the psychological domain, and not in the vibrational; there is no outward reality to it in the continuum/flux. The algorithms within a human being may be oriented towards seeking approval because they learned this was necessary for their psychological function from early childhood. Once they became a musician, this transferred over to a desire for approval from tradition/teacher/etc. I make no attempt to qualify value judgments about these algorithms as “good” or “bad” but merely seek to encourage all of us to inquire honestly into them, and especially into what purpose they serve. An example of fairly obvious psychological algorithms that would be considered unhealthy by most in the dominant culture is an addiction to candy – which provides virtually no actual nutrition. The algorithms of the organism have been programmed to seek candy because they have learned, somewhere along the way, that this was necessary for their

psychological function. It is not necessary for their biological function; it is actually at odds with it.

Music is conditioned in much the same way. The lowest common denominator mentality of pop culture is an addiction to candy; unless we re-educate and re-orient our listener's ears, they won't even remember the taste of good food: good music. Culture, consciousness, and musicking all exhibit the same recursive, algorithmic qualities. They are each varying orders of complex dynamical systems, and exogenate the generative activities enacted within them.

With listening practice, as well as embodied attentional inquiries, we can explore what happens when we drop some of these psychological algorithms and filters. We can explore the questions: "which are necessary? What function do they serve outside of the orbit of the self-same attractor inside the dynamical system? Do they promote coherence in relation to it, or in relation to a larger field of understanding? These are vital questions, and I encourage the reader to keep an open mind and continue to inquire.

A concrete example in music will be useful here. A violinist employs a complex set of biological algorithms²²⁹ to execute a piece of music – these include muscle memory, listening apprehension, kinetic awareness, etc. Over years of practice

²²⁹ These are further analogous to *knowing how*, and the praxis of sensorimotor dependencies.

they refine these so they are prepared to execute very complex tasks on demand.

These are competencies.

The psychological algorithms will include comfortable, known pathways about how a piece should be performed – what it should sound like, what the right interpretation is, etc. They will often include pre-conceptions about the pressures of performance, the context of being a classical musician, etc. These are runnels in terms of CDS', or chreodes²³⁰. They are very subtle, and often veiled. I argue that vital, living interpretation of the canon, for example, will be best served by either dropping these algorithms completely, or at the very least cultivating an informed, conscious relationship with them. This requires the cultivation of discernment between activity that is mimetic (even if it is a 'new' or 'novel' expression, it may be mimetic at the level of consciousness) and activity arising from a true coherency apperception. This is critical, and entirely an inside job. If it is not done, what is produced is inevitably mimesis and not true creativity. In order for the art music of the canon to be a living, vital tradition, it is thus necessary that competencies in the realm of embodied process become heightened, so that it is coherency apperception, and not mimesis, which organizes the performance. It's not just about the avante-garde. And unless we relate

²³⁰As another illustration of these concepts, it is useful to visualize a basin: all of the water, or whatever other substance is in the basin, collects at the bottom. Similarly, all of the energy in a system will tend to collect in chreodes and runnels, forming habits, and this is further an illustration of attractors in the human dynamical system.

to other cultures in a way that helps to cultivate this forward movement, we are implicitly involved in cultural genocide, still.

Once again, I encourage the reader to inquire for themselves: what are the biological algorithms/filters that you use in musicking/listening? What are the psychological algorithms/filters? What purpose does each serve? Do they serve the activity of musicking? Are they extramusical gratuities? Are we willing to see those that have dwelt beneath the surface?

Psychological algorithms frequently reinforce an identity: “I am so and so, I am a classical musician, this gives me a certain status in society, this justifies my existence, etc.”. These are fundamentally self-valorizing. One could argue that this is the mechanics of the expert/non-expert duality, as well, keeping the listener and the performer/composer divided into passive and active roles, respectively.

Now I believe all musicking is participatory and interactive – even when we pretend it is not. In the western tradition, we have become accustomed to relegating the listener to a passive role. Musicking is done to them – the paradigm is virtually one of rape, and I think McClary’s observations about Beethoven’s 9th are completely valid (McClary), at least as long as one contextualizes them as metaphorical, and not indictment. I think in a competently metaphorically contextualized dialectical environment she would not have felt the need to edit her statements in later versions of the article.

The listener’s awareness is actually the final link in the signal chain – no matter what the performer/composer does to them, the listening faculty of the

participant renders the actual final product, the musicking experience. Hence I advocate a reautonomization of consciousness – of the implicit awareness of the listener. Interactive and participatory music embraces this, capitalizing on the implicit interactivity that is already there, and I think it is no accident that we see an emergence of these qualities from the dynamical system of culture over the last 100 years.

Without making a value judgment that psychological algorithms/filters are ‘bad’ and should be ‘gotten rid of’, I’d like to encourage us to get really honest about what purpose they serve, and inquire. This can only be done through internal observation in the laboratory of direct experience: it inverts their prior unfoldment as habits, and reveals their generative activity. Through unfolding processual activity, it disentangles them.

Many of these psychological algorithms are self-valorizing – creating closed loops in the system, and these are analogous to the closed loops we see in the tradition. We can discover isomorphisms between each, and observe the self-same attractor directly. The danger is to become an instrument of our algorithms, rather than making them an instrument of our musicking. John Cage expressed a singular distaste for improvisation in his career, as mentioned earlier. A strange thing, coming from a man who consciously held very few strong preferences. I believe the reason for his distaste was that he perceived improvisation as either being entirely an unconscious product of one’s internal psychological algorithms, or at least so often so

that it rendered it distasteful to him (especially in relation to his particular musical processes).

I think there is an important commentary on improvisation here – to the degree that it becomes a mechanical reiteration of one’s internal algorithms, it is not improvisation, in the truest sense of the word. It is mimetic chaotic resultant, emerging from the system. This highlights the value of listening practice and pedagogical inquiry to the improviser in informing their rehearsative and performative practice – by elucidating this territory for themselves, they can cultivate the capacity to improvise in ways that go beyond their inherited algorithms.

The question is, can we go beyond our algorithms? Are we mere products of them? Subjectively, we can observe these algorithms operating within us. Who or what is observing them? Consciousness – independent of the algorithms. Consciousness is what shines through these algorithms. Is this true?

Pauline Oliveros teaches a meditation called meta-listening, which we explored earlier; it is elucidating to the nature of consciousness, and useful to return to. In this practice, one listens to listening itself: one places attention upon attention itself. It is a very powerful meditation that has the potential to expand one’s awareness profoundly.

Significant is the activity of placing attention upon attention itself. From the traditional view of our consciousness as a linear activity, this is a *coincidenta oppositorium*. The fact that attention can be placed upon attention itself points to a multi-dimensional nature in consciousness, as explored earlier.

The very act of listening involves contextualizing multiple layers of complex data over a temporal span – it is not a linear activity of cognition; it is the cognition of a dynamical system (sound) in interactivity with a larger field of CDS' that expands into infinitude. Furthermore, meta-listening represents a hyperabstractive activity, but one of the nature of a cognitive inversion. All recursive generative process can be seen as being of the nature of the hyperabstractive activity; it exists in them as a generative seed, as a mirror of the isomorphisms which are gradually simplifying our analysis of generative activities into reinforcement of fundamental themes. In the case of meta-listening, attention is turned inward, in this cognitive inversion, back into the intrinsic activity from which the conscious observer arises, back into the source from which it came. You could say it is phase cancelling its self, and thus the hyperabstraction is of the *viva* negative, and not the *coincidentia oppositorum*. What emerges, and is observed, is the self-organizing activity of the system intrinsic. This point towards the inclination, within the organism, to explore heightened degrees of coherence, and to inculcate them into the system at large, as well as the means by which this is done, which are fundamentally self-organizing. It also points to a larger understanding of coherence which we must arrive at.

To make some final observations on music in this chapter, one immediately observes that we are implicitly communicating at a CDS to CDS level – that what is communicated is of the nature of quantum information, actual vibratory processes, not the psychological, and not even the sonic as a reduction of these. The power of

music is to reflect this underlying reality, and disseminate it. In our embodied inquiries we induct the vibrational impact of a piece of music directly, its CDS to CDS communication, through the experience of it in our bodies as lens. This is also what happens with listening.

Each actor, listener, composer, performer, etc. is a sensor in the environment of the system, adding to the overall communication, in the sensor/creator model of systems. This leads us into the metaphor of human being as system exploring different states in their state space, and art as facilitator of this unfoldment. In the transformation from closed systems, to open systems, 'states' take on a transition in the nature of their dynamical interactivity which is literally a human revolution. This revolution is not towards the intrinsic activity as resulting in passive enactment, but rather as resulting in radically active enactment, as well as the natural form-genesis of new morphologies of enactment which this leads to.

Aboriginal people are often observed to have competencies that we have forgotten; they can smell a tree and tell that such and such animal came and rubbed their bodies against it the day before at 4AM, for example. Their entire life is an embodied practice, cultivating heightened competencies in a multi-sensory field. Our modern world only appears to lack this degree of interactivity, due to the illusion of atomization programmed into our built perceptual universe. This universe may be deprogrammed, and one may immediately notice that we are in no less a degree of interactivity, that it had merely been veiled, and that we have always been in an embodied process as unfolding dynamical systems.

Dynamical Listening Observations

In the slow transformation, over time, of the melodic iterations (and their interactivity) in Steve Reich's Music for 18 Musicians, there is a matter-of-fact quality: it is just how it is: modern life unfolds around the observer; if any protest occurs, it is entirely an internal affair. In terms of the music (as well as the ferment of modern life), from it emerges (quite possibly unexpectedly) a new order of coherence, organically, that is uniquely its own. What is 'natural' is not relegated to tree, stone, and sky. Over processual time, the voices, etc. join in an ensuing celebration that is, ostensibly, if one must interpret it, a celebration of modernity²³¹. Synchrony in modernity translates to synchrony in human embodiment; through process, resolution: not through teleomorphic arrival or conclusion, but through unfoldment itself, one arrives at a resolution which is not a resolution (just as one can speak of a “stateless” state), but which is rather a merging with, and the concomitant synchrony with, which results. In the acceptance of what is, enormous activity, enormous complexity, and enormous intelligence emerges spontaneously.

Eighth attentional inquiry

1) (5-10 minutes) I ask that you find a very quiet sonic environment, one which you would perceive to be “silent”. Please pay attention to your experience of

²³¹ But modernity as a vibrational phenomenon of emergence, not an ideological reduction.

“silence”. Once again, if the mind wanders, do not push away or pull in whatever the distraction is; merely bring your awareness back to the experience of “silence”.

2) (5-10 minutes) Now bring your attention to the experience of stillness within. Once again, if the mind wanders, gently bring it back.

In observing the constructed experience of silence²³², we observe the implicit unfoldment of a biological filter when attention turns and observes it directly (rather than remaining in unconscious relationship to it). We are looking out from a built perceptual universe which is, in part, shaped by this filter, all of the time; in this exercise, we turn, face it, and observe it.

In contrast, I believe the experience of internal stillness points to synchrony in the dynamical system as it exogenates within the empirical landscape: that we are literally observing the activity of coherencing unfolding in this attentional exercise. The significant contrasts between silence and internal stillness act as a metaphorical praxis for understanding the empirical unfoldment, and how it interacts with musicking. Thus we find touchstones for connecting our dynamical systems study, and our study of processual unfoldment, allowing them to interweave and co-inform each other.

²³² Silence is a biological filter; a noise floor in response to the average ambient noise in the environment through its temporal unfoldment.

It stands to reason that in observing these we exercise and strengthen the attentional interactivity with the phenomenon observed, the runnels and chreodes therein, and the isomorphic similitudes which are part and parcel of this, as nerve that fire together, wire together. Listening pedagogy exercises attention placed upon sound in various fashions to refine the perceptual apparatus, as well as to instigate new dialectical and artistic directions through the resultant processual unfoldment. Like a muscle, the more attention is placed upon an activity, the more it unfolds in interactive relationship with said activity, and the more the organism develops competencies which reflect this interactivity.

Competencies in these arena are invaluable as musicians, as they represent the core praxis of musical unfoldment. From these, we can extrapolate the possible constructions within a listener who we may be performing or composing for at a level deeper than we could without it. We then have the power to consciously continue or discontinue certain pathways within the algorithmic matrix of our musical conditioning which we may have unconsciously adopted at some point, and created blind mimetic recursion in relationship to.

In terms of the nature of consciousness, it is very significant that we can observe the experience of silence. How many times have we taken silence to be “real”? Now, if we can observe this constructed experience, who or what is observing it? Who or what is constructing it? Is ‘that’ a constructed experience, as well?

This exercise was an embodied experiential metaphor unveiling different empirical limits, intrinsically posing the question of what psychologically

experienced and bioresonant coherency are, how we discern them, and what the significance of this is, in preparation for our ensuing discussion of coherency. The biangulation of this attentional exercise unfolds the ‘hidden variables’ of the implicitly constructed experience of our built perceptual universe, and our biological filters as intrinsic to this, in contrast with coherencing as it is, and how we experience that.

I made the argument earlier that 4’33”, Duchamp’s urinal, etc. could be understood as hyperabstractions of activity prior to our mediations of sound, our conceptual frameworks, etc. because what is actually being hyperabstracted is the activity in the neural substrate, and not our conceptualizations of such.

Hence, in observing this activity of inner stillness it is my opinion that we are observing the neurobiology discovering new orders of coherency in realtime, the self-organization of the dynamical system, and that these are the endogenerative signatures of the creative activity of the universe, the intrinsic activity in operation as a self-organizing system upon the cessation of our interpositions upon it; in observing this, we further strengthen our competencies in processual interactivity with said phenomena. This territory is integral to the emergent direction which I advocate for, and this I consider this attentional unfoldment to be highly relevant, useful, and potentially profound as a pedagogical exercise - it helps us to relocate this territory of coherency as it is from the ephemeral and the abstract, to the concrete and directly experienced.

COHERENCING

In order to arrive at a competent discussion of coherence, we need to start from traditional definitions and expand outwards. If we approach it with the same multi-dimensional understanding through which we have approached listening (through biangulation, triangulation, etc.), one that integrates the empirical/intellectual, then we get a phenomenon with infinite sides to examine, and our discussion will reflect this, as well as an awareness of the place intrinsic enactment apperception plays in unveiling these sides.

Coherence is traditionally conceived of as a state of harmony in contradistinction to incoherence, thus consonance/dissonance order/chaos etc. as functional dichotomies. In this view, systems are in coherence (in their ‘state space’) at times, and not at others. One problem with this view is that it does not address why one system experiences, or embodies a certain coherency, and another experiences/embodies another. These can be seen as completely arbitrary, or chaotic. If we take figures 6 & 7 as examples (see Appendix C): the first page of *Quartett Op. 22* (Webern), and the first page of the *9th Symphony* (Beethoven), we can use them to frame our conversation in bas relief. From these brief excerpts of the opening of two pieces of music as unfoldment in the temporal and frequency domain that the rest of the composition will be in praxis to, we can begin our conversation. We can call these ‘frames’, as in a frame of a projected film strip.

Each is ‘coherent’ within the ‘state space’ of the compositions they are embedded within. Thus coherency may be analyzed simply in relation to the isolated, or closed system. All atomized interactivity (for example, in relation to these two ‘orbits’) may be analyzed purely upon this basis from an explicate perspective.

However, there are no closed systems in nature; all exist within the context of the open system. Thus coherency observed on a local level is misunderstood if understood only to be a resultant of local factors. To complete a local, ‘closed’ systems analysis, in interactivity with each other these elements may be seen to be mutually coherent, in a coherent/incoherent relationship, or in mutual incoherency. These are still coherencies only in relation to the internal particulars of that system.

Academia has matured over time towards the use of spectrums of expression in more and more cases, rather than black/white dichotomies; eventually these break down into the continuum/flux, and this is implicitly recognized herein. Complexity is known to exist beyond our capacity to represent/model it, as has been illustrated here in CDS’, the metaphorical nature of languaging, the limits of perception, etc.

All of this represents an analysis based upon an atomized interactivity; when the seemingly solid lines between actors, agents, etc. breaks down, we arrive at a deeper level of dynamical interactivity. The discussion of atomized interactivity becomes a metaphor for it; in addition, we need new metaphors and dialectical framework from which to address it.

This orients us towards a notion of order implied by the implicate metaphor, or the implicit; what is seen as dissonant has the consonant implicate within it; the

dichotomies become dependencies (not unlike sensorimotor dependencies), not realities. Similarly, the dissonant is implicate in the consonance (Husserl's notion of temporal awareness in music becomes relevant, as we are locating ourselves within an unfolding temporal process) and we have infinitely interpenetrating possibilities from there. This is a mirror of nature (and the intrinsic enactment apperception is in turn a mirror of this) where quantum possibilities are said, like the double slit experiment, to exist, literally, in the field. Not in some 'other place' where information is stored (as a psycho-analogue to our own disembodied notions of consciousness) but rather, right here, in the actual geometries of unfoldment. In the continuum/flux.

Husserl's analysis of temporal awareness, married to intrinsic enactment apperception, simplifies the matter. A listener can make sense of a piece of music because they have situated themselves in the geometries of a field of possibilities implicit in the vibrational unfoldment in 4 dimensions: 3 spatially plus time. And as mentioned before, the intrinsic enactment apperception is an interior analogue to this: so much so that one must begin to suspect that intelligence itself is facilitated by isomorphic, bioresonant process, and that our notions of intelligence are merely interpositions upon this. I would further like to frame coherence in terms of activity, as coherencing: just as in musicking. For it never exists in the freeze frame that 'coherence' implies –this only occurs in our reductions, and as a facilitation of our more simplified analysis'.

Rather than having incoherence and coherence as dichotomous, counterpole relationships, we can recontextualize coherencing as implicate and explicate – wherein explicate coherencing is always being discussed in relation to the particulars of a ‘closed’ system, an idea or thought, a person, an actor, a body, a musical composition, etc. and can be analyzed in terms of the atomized interactivity of these. And implicate coherencing includes a larger awareness of the open system, one that includes all unfolding potentialities, and recognizes their generative source. In addition, it is understood to be the generative enfoldment out of which all unfoldment occurs.

So in terms of music, each person has their own mode²³³ of coherence that to another person may seem like incoherence. The Webern ‘frame’ above in turn exists within a mode of organization/coherence²³⁴, and so does the Beethoven ‘frame’; cultures have modes of coherence, etc. All of these, without exception, are generatively sourced in the implicate, within which they are interested. It should be simple to see how this frames so many other elements of our discussion; it frames dialogic space, it frames musical space, it frames consciousness. The vast majority of musicological analysis can be seen as an exploration of the explicate unfoldment of

²³³ This is another way of talking about explicate coherences.

²³⁴ Is this mode of organization (which the Webern ‘frame’ exists within) more fundamentally of the order of the organizational activity of the universe, or human processes?

various processual dimensions in music; they can be recontextualized here as further existing within the implicate as the enfolded information which they exogenate.

So then the question becomes understanding the variegated orders of coherence, what their relationship to each other is, etc. This then becomes a natural extension of the ongoing exploration of interpenetrating CDS; we see this unfolded in Small's book Musicking, as well as here, both through intellection, as well as through the attentional inquiries.

In dialogic space it creates a metaphoric context for tolerance, inclusion, and equanimity amongst disparate voices, from which these may be integrated towards greater cohesion and creativity²³⁵. At the level of the implicate, there is a unity. At the level of the explicate, a diversity. In musicking it creates the same; the expert/non-expert mentality is no longer needed in this frame, nor is the passive listener paradigm. It further creates an excellent frame for intelligence, wherein multiple intelligence and single intelligence theories are integrated as one whole without reduction of either.

There is neither one intelligence, nor multiple²³⁶, the many is interested in the one, where the implicate=one and the explicate=many. In terms of music there are

²³⁵ Similar to those outlined in Camlin.

²³⁶ And both are simultaneously true. We can start to unveil how this intellectual frame creates a context wherein a statement and its apparent antonym can be simultaneously true; wherein hyperbole becomes the terrain for revelation.

musical competencies (knowing how) that are organized by the implicate competency: the coherency apperception, the *rasa*, the soul. Together they constitute musical skill. The implicate is the organizer of consciousness, and to those who master it, the fruits of human endeavors are laid bare.

I would like to take now a brief moment to outline my notions of apperception, coherencing, and coherency apperception, respectively. Apperception represents the totality of attention. Most examiners have defined attention exclusively in terms of the conscious observer (n); as I have reinforced thoroughly, I believe this is a fatal poverty of intellectual rigor with far-reaching implications beyond the academic. Obviously neurobiological approaches to studying the brain and the misconstruing of the nature of the intrinsic activity of the brain provide excellent corroboration of this.

Perception, feeling, thought, the conscious observer (n) and (a), the unconscious (n), as well as unconsciousness (a), as well as experience; each are fragmentations of attention. Apperception is the totality of attention in my view, including what we consider 'unconscious' (n). Apperception can only be approached through means which reclaim the totality of attention from the fragments which have broken off from it. It is occurring right now; even experience is a reduction of It. Thus experiential methodologies (and experience itself) cannot be made into a fetish; experience can be understood to be a metaphor for this larger activity which is the resultant of, or an emergent property of, the entire dynamical system. Coherencing is the activity of self-organization intrinsic to nature. What appears to us as incoherence

will always be coherencing from a deeper purview. Coherency apperception is a process that occurs in the organism in relation to the activity of the open system which I will outline now in detail due to its relevance to musicking.

As a resultant of a dynamical system called the human organism in interactivity with the coherencing of the open system, coherency apperception is both passive (as is generally implied in perception) and active simultaneously. As the organism interacts in various dynamical ways, coherencing possibilities emerge from the system: these appear to our conscious purview as ‘states’ in our ‘state space’, as musical compositions, as ideas, thoughts, feelings, etc.

If left to unfold without interference, this activity is concomitant to the coherencing of nature herself²³⁷. However, individuals can be visualized as having idiosyncratic apperceptive coherence matrices in their neurobiology (but not exclusively) that produce synchrony spikes in the instrument in response to coherencies that matches the modes of coherence they are wired to²³⁸. These would

²³⁷ Coherencing can thus be understood to be self-organizing in its activity.

²³⁸ This is an emergent understanding observed in the musicological literature, alluded to, for example, by Small: “... the sensation of beauty is a sign that the gesture or object relates to the perceiver in such a way ... it is as if the perceiver has in mind a grid of relationships...” (Small 219)

The apperceptive coherence matrices are intended to be a metaphor; a visualization of a ‘slice’ of neural activity, which is in unfoldment unbroken; coherencing in the organism, in turn unbroken from that of all life processes, in order to illustrate these processes.

be in a spectrum of mimetic to bioresonant. The purely mimetic (for sake of discussion) would produce synchrony spikes in response to coherency patterns familiar, and in so doing, promote their recursion. The bioresonant would produce coherency spikes in response to coherency as a phenomenon; not just familiar patterns.

In the systems view presented here, if there is such a thing as free will, it is through engagement with the faculty of coherency apperception. It is the generative source of the activity animating the system, both sub-lingually and externally. In every moment, the lifestream we find ourselves in is a product of the coherencing unfoldment participated in during and previous to that moment; it is their iterative resultant. Thus the coherency apperception operates not in response to intention, but to what has been participated in at the level of consciousness, for these are the generative activities that inform the iterative recursion unfolding in realtime. There may be a crossover with intention, but that notion as constrained by the conscious observer does not contain its entire activity.

The ACM's²³⁹ may produce a synchrony spike in response to coherency roughly along a spectrum from mimetic (familiar forms recursed) to bioresonant (recognition of coherency itself as a phenomenon in the field) in infinite diversity. They may further be wired to respond mostly to coherency along a spectrum from the

²³⁹ Apperceptive coherence matrices.

psychological domain (beauty, pleasure, art, etc.) to the vibrational domain (the continuum/flux, or life as it is); this can further exogenate in a spectrum that includes: dynamical system (organism) coherent to itself, multiple systems coherent in relation to each other, the coherency of the implicate, and every permutation in between.

One will immediately note the correlation between this theory of art, and the synchronies exhibited in the neurologies of Buddhist monks, and classical musicians (Dobbs)²⁴⁰. One must start to ask not only “to what degree is the listener responding to coherency inside their own biology, and their own psychology?”, but also “to what degree are they responding to coherency in the acoustical space?”, as well as “to what degree are these perceptions of coherency, and to what degree are they systems coherency, apperceived through bioresonance?” and finally “do they in addition respond to the synchrony/coherency exhibited in the neurobiology of the performers?”. And this inquiry can actually continue to go deeper indefinitely. In other words, does coherency apperception, and intrinsic enactment apperception, reach beyond the superficial appearance to a level of bioresonance that includes the

²⁴⁰ Coherency apperception as a phenomenon (which I believe we can all observe simply, internally) finds corroboration in a wide variety of scientific studies. Evidence exists, for example, in studies of gamblers where 40Hz brain waves are consistently correlated to pre-cognition of a hidden target (McDonough et. al), illustrating a synchrony in the field that is cognized. In addition, studies where ERP's were correlated significantly to the hidden presence of targets participants were asked to predict, regardless of whether their predictions were correct (Don et. al). In other words, neural synchronies exhibited whether consciously recognized or not by the actor in this study; thus it would seem that coherency apperception is intrinsic to the organism.

entire unfoldment of the generative activity present, which is concomitant to coherencing as a larger activity?

We are coherencing in every moment: the nature of that coherencing is not always what our idealization of coherencing is. In music, one likes metal music, another classical music, another birdsong, another the avante-garde – another no pattern at all (because they want to be available for the next pattern that emerges, that is what excites them most about music). They may pattern after a form, and they may pattern after no form at all.

One woman's coherencing is another woman's incoherencing; and yet to the latter, that is her coherencing. You could say she "chose" it, but it wouldn't make sense in terms of traditional notions of "choice"; unless you ascribed this to the apperceptive faculty, and not the conscious observer: it is an implicit choice, a resultant, and one we may not even be aware we are "choosing". And yet at the level of the implicate, even incoherencing is coherencing; this is utterly hyperbolic, except for dissipative theory and the understandings therein, and the abolition of the poverties of intellection that have kept us on this side of the 95%, as well as on the interior side of the glass in terms of our inhabited systems. Over said divide hyperboles become creative infinitudes just waiting to burst open.

Coherencing is furthermore inevitably a discovery; it reveals itself in and through unfoldment. In terms of patterns, one observes these unfolding in every 'direction' one looks: inside the body, in nature, inside consciousness (whether those activities are conceived of as the brain, or in any other fashion), in musical process, in

one's human relationships (which can be taken, in our analysis, to be the interactivity between this complex dynamical system, and 'the other'): the question is, are these patterns the reified, frozen nouns we take them to be? Or verbs: activity? It is merely an attitudinal shift, and yet it reorients the entire generative activity of the system.

In other words, how do we experience them. Because if we experience them as nouns, as being of that universe (even if we get that they are activity intellectually), that is the built universe we will invariably inhabit. The more we experience them as verbs, as unfolding process, the more they are an exogenation of unfolding process, of "the real" (a), of "sounds [vibrations] as they are", etc. and that is the universe we will inhabit: as we know, experience is constructed from the recursions of our generative activity.

Therefore, if we do find ourselves experiencing the activity of nouning the world as real, we need to change our generative activity, if we are at all interested in getting honest. And we must uncover it to do that. Clearly just 'intending to' is a start, but not a finish; we must apperceive the operating principles of the instrument to make music on it, and we do this through our apperception. Thus we arrive at (like listening to listening) a veritable apperception of apperception; hyperbolic only from a linear frame.

It is thus an empirical uncovering in which the empirical is completely disentangled; the morphoteleological activity fueling this thinging, this nouning must be ceased for this to occur. Thus one can understand the wisdom of enacting the intention of allowing things to be as they are: from within the empirical lens, even if

things are things; even if the psychology has taken a phenomenon to be a thing and that is very “real” (n) to it, as in the “experienced real” (n), this activity of allowing that phenomenon to be as it is, when rigorously applied, inevitably returns it to its vibratory nature from within that built universe. It disentangles the thingness and inevitably returns the empiricist from “the constructed real” (n) to “the real” (a). Inevitably returns the abstracted, self-same attractor (activity of self-nouncing), to unbroken life processes (activity of self-organization, or self-equilibration: something that occurs, not something “done” by a fictional noun in a fictional landscape. Or nature in her manner of operation, from another angle.).

And so it is with musical process. As my musical process unfolds, and I observe it, if it becomes an experienced thing at any point; if it has become arrested in a cul-de-sac of morphoteleological recursion, a frozen self-same reflection (rather than an unfolding self-similar process, where self=the activity of the open system, not a closed system); then I can apply this reminder, and allow it to be as it is. Thus the enactment of allowing things to be as they are in embodied inquiry cultivates neurobiological competence that can be extended into my musicking activity.

If I do this rigorously, I wake up from the illusion of an abstracted stage upon which my musicking occurs. Yes, my neurobiology is designed with an intrinsic enactment apperception faculty, a brilliant self-similarity enactment laboratory for unfolding within the unfoldment: for process on process, by which I can make sense of a processual universe. But it is not to be taken as an abstracted stage (n) as in to take its self as more real than the implicate stage of vibratory processes: it is an

abstracted stage (a) as in a forum, a tool, wherein my competencies in its operation capacitate my competencies (and interactivities) with the implicate. It is a metaphorical landscape, not a reified one, and understanding this marks the difference between its utility, and its futility.

This paper is itself of the nature of process on process. To be human is also of the nature of process on process: remembering that life is self-equilibrating in nature, that the nature of systems is to self-organize, the rigor of this empirical inquiry challenges us to facilitate an emergent process of a higher order. Experiential and embodied inquiry uncovers the vacuum dynamics that can ignite the flame of musical embodiment: the living presence of the unbroken creativity of life processes, realized in human form²⁴¹.

And I believe great artists corroborate this. Their entire life becomes art; the way that they engage the public, the way they walk in nature, what they write in their journal: all of these become relevant. Why? There is an intrinsic recognition therein that their life processes are not separate from the activity of coherencing that their musicking exogenates. The moment of coherency apperception is just as often a resultant of life processes as it is of musical processes, (as a personal story recounted by David Cope in Computer Models of Musical Intelligence illustrates [Cope 36-37]),

²⁴¹ Furthermore, the activity of consciousness illustrates an inter-nested unfoldment that is a veritable process on process on process on process ad infinitum.

thus to draw an artificial dividing line between the two is to ignore the evidence of countless biographical accounts that illustrate this in artists' lives.

And the self in self-organize is always the entire system; always the intrinsic activity and not its reduction. Musicking inevitably returns us to this: we are not the closed systems we took ourselves to be, and cultural notions of identity (even as 'the whole thing') are inevitably reductions. As long as we take ourselves to be closed systems, that is what will self-organize from our generative activity²⁴². That is 'my self': the experienced noun. It will (from past evidence) very quickly exhausts its flipbook of patterns, until it finally arrives at their end, and inexorably finds itself interwoven with the implicate, and in need of returning to it (via the intrinsic activity of the brain, etc.) to be resourced.

We pattern after what we align ourselves with in terms of our coherency apperception, and this invariably exogenates through our life processes. So if I understand my activity to be a resultant of the open system, then 'self' (a) is unfolding activity of this entirety, even before "I" ever realize it. And thankfully, this entirety does not have a flipbook, does not have an end; before the activity of its coherencing has even been sketched down in pencil (as a score, ostensibly) it has cohered into a new pattern, and a new pattern, and then a new pattern again. Empirically, this is

²⁴² Or, more accurately, appear to organize, as this apparent closed system is still simultaneously organizing within the open system. Hence, the inherent tension of teleomorphosis keeping mutagenesis at bay through its own self-recreation and delusion is like the unfolding acts of a Shakespeare drama.

apparent from the first strike exercise (and the neurobiology on evoked sound action potentials), as well as attention to vibration and all the rest of the attentional exercises implicitly; in addition, it is apparent from a simple understanding of vibratory processes in the themselves.

So if what we are patterning after is a noun, or a verb, is literally a world of difference: the entire built universe of the human being transforms upon the praxis of this generative shift. One could say that from the dissipative structure of a nounced universe falling apart, a verbed universe re-emerges. It's just more accurate²⁴³. And allowing sounds to be as they are is an attentional activity that consistently reorients this praxis, exercising the instrument, and through its reenactment cultivates competency in the implicate. It builds competency beyond the explicate nouncing. The resultant is greater and greater ease in said reorientation in the organism, until it is no longer needed, because the organism is established in the implicate: it is no longer reaching for the explicate bottle, and its coherency "fix" in the mimesis of forms (where form is understood to refer to a generative organization, and not just musical forms).

²⁴³And in Kuhn's analysis, this accuracy is codified, becomes *thinged*, and the whole process recurses historically. An implicit question here is: does it have to recurse this way in music? In other domains of life?

What we participate in at the level of consciousness²⁴⁴, recurses, and then becomes our built universe; this intention of allowing is not a passive not-doing; it is an active participation in the un-nouncing of an objectified field of limitation, to the degree that said field may unfold in the intrinsic creativity of a universe far more intelligent than any fictional noun, or conscious observer (n) as such. This intention is enacted in the empirical laboratory: the bioresonant laboratory of direct experience, not the exterior stage. It is an agent of disentanglement, and the enactments that result from that.

I believe that the outcome of these bioresonant experiments are self-validating: that when we rigorously attend to every way in which our consciousness is not allowing everything to be as it is, and is nouncing it: discursive distraction into mental recursions, psychological fears, etc. when we allow them to be, as well, and allow the stream of intentionality to expand to all phenomenon (because paradoxically if I repress anything in the interest of allowing all things to be, I am not allowing all things to be), we discover an *a posteriori* freedom which is the activity of coherencing unfolding, and abandon the *a priori* freedom which is the masquerading of coherencing recursing.

²⁴⁴And consequently at every other level of consciousness, animates.

To speak from my own experience; I have years of experience enacting this composition (allowing sounds to be as they are) now²⁴⁵, and what I can say is 1) it is different every time, and 2) it's resultant is not passive, and 3) it intrinsically reveals the self-organizing activity of the organism (This includes consistent reported experiences of spontaneous physical and mental relaxation, creative inspiration, physical and mental coherence, etc.²⁴⁶), and 4) it inevitably promotes movement in process and unhooks the places where it has become entangled; those that have become nouned.

And I think it's a beautiful illustration of the activity of consciousness that help us to (re)orient the scores, or sets of instructions, that we enact upon the inner stage (and these are always generatives seed for what becomes enacted outwardly.). However, what is enacted inwardly, and what is enacted outwardly, are not in a one-to-one relationship (like the telescope, and the geometries of the milky way). We must actually understand the activity of consciousness unfoldment, of the praxis of direct experience and coherency apperception that arranges what emerges from this praxis into unfoldment; otherwise we don't actually understand the instructions we are giving our performers (or ourselves internally). Thus coherency a human demands competence in the arena of consciousness unfoldment. And because the new coherencing potentials we exogenate in our art are a resultant of these processes, as

²⁴⁵ Along with hundreds of students and workshop participants.

²⁴⁶ By an organism that is 'doing nothing'.

well as being part of their generative seed, the process is intrinsically one of unfoldment of the field, and not of the conscious observer; of infinitely interpenetrating interactivity, and not atomization.

Coherencing is the very activity of our art²⁴⁷; the nearer we are to “things as they are”, the nearer we are to it. The brains of mice have been shown to be more active during ‘silence’ than when exposed to acoustic stimulation (Kirste et. al); in addition, the human brain has been observed to be 20 times as active when ‘inactive’ (Raichle 2010). Similarly, I believe we must confront the reality that we are more creative, and exploring more creative potentials intrinsically in many of the ‘states’ in our ‘state space which have been labelled meditative/etc., and which move away from the directives of conscious control and the control-based paradigms these inhabit, than we have been willing to consider.

We use coherency apperception in so many ways - temporally, spatially - our embodied process is shaped by our interactivity with the CA²⁴⁸. For different artists, the synchrony spike, or spikes, that orient them are discovered at different points in the process: before the process, and then unfolded through it; towards the beginning of the process (after some exploration), near the end of the process (after laborious development), after the process (with delight at discovering how it unfolded), in the

²⁴⁷ As well as of all life processes: it is the generative activity underlying.

²⁴⁸ Coherency Apperception.

midst of the process (in the continuum of improvisation) and every single permutation in between. Spatially, it is discovered at the instrument, on the bus, at the parents' house, at the computer, in the shower; in terms of the cognitive filter called the 'conscious observer', I believe that artists often know the exact moment when the coherencing pattern of a piece has been apperceived in its entirety, but sometimes they don't: it's entirely 'unconscious' at times. No embodied process is better or worse than any other, each is shaped by the coherency apperception just as much as it's an exogenation of it.

Sometimes it is an entirely imaginative affair, discovered in the intrinsic enactment apperception and then arranged outwardly; sometimes it is discovered in the interactivity of process. Every artist is coherencing a different activity, and this activity is in turn recreating their world, as well as the world of the listener. Their embodied process is both shaped by it, and is simultaneously intimately shaping it. And even though it is impossible to pin down verbally the generative activity the CA patterns to, what I have dubbed the apperceptive coherency matrices in order to facilitate discussion, we 'know' it from an artist's work instinctively, we know what that generative activity is creating because it is literally creating it inside of us as we listen. The 'modern' feel of Steve Reich's music seems to inhabit a world of optimistic and thoughtful inquiry, and a certain form of progressiveness. As we listen, we become a part of his embodied process. The mystical and transcendent quality of Terry Riley's improvisations - they create that world in us, and we know his embodied process at a deep level through our own mirror apperception system, through our own internal

recognition of it.

We feel the embodied process of the performers, as well; the breath control of the clarinetists and the vocalists in Music for 18 Musicians. The virtuosity of Terry Riley's improvisations - sometimes that is what attracts us to the music. As a keyboardist, I feel Riley's virtuosity in my own body - I have an intrinsic apperception of his coherency apperception exogenated as wild virtuousic fingers. Part of the magic of ensemble music is feeling the miracle of the synchrony of an ensemble. We really can work together as a species! Minimalist music returns us to the cyclicities of vibration themselves - we become lost in them, just as we become lost in life - we even fall in love with becoming lost in them, just as in life. We are taken. When we see the conclusion of any large scale piece, we feel the performers triumph at having realized a piece of large magnitude - a familiar rush in the chest for any professional musician. And these are just a few examples.

The problem is in defining a symbiotic/asymbiotic distinction that is coherent, since as long as a CDS' function is morphoteleologic, what is coherent to one system will be incoherency to another. When systems coherence is in relation to itself as a closed system, this will inevitably be true. But when systems coherence is in relation to a greater whole, this breaks down. So no matter how difficult it may seem, we need to approach our art from the perspective of 'how does it impact the entire system.' The obvious challenge in this is that addressing the 'entire system' involves a degree of complexity we know is impossible to model or understand, and so we often shy away from approaching it due to this. And yet, as we know from the study of CDS',

even small systems are impossible to model or understand, so we are in fact not in such a different boat approaching the problem from the coherence of a small system, or ‘the whole’. As has been suggested throughout, the body, the intrinsic enactment apperception, and consciousness, are actually designed to navigate this complexity, so we aren’t so bad off if we are willing to use what we have been given. We must explore coherencing from every angle possible to really apprehend it, and our inborn instrument is designed to do just this.

In systems, coherence represents a level of unity in the system; an order of coherencing represents, in alignment with Bohm’s discussion of implicate/explicate orders, one of many orders interrelated, interrelated, and possessing shared generative qualities. One will note that this is isomorphic with nature, with interrelated and interconnected orders of dimensionality, systemic expression, and coherencing therein.

In syntactical situations, coherence can be in relationship to the particular syntactical rules of that system. This can be related to tradition and the normative musical patterns one finds one’s self situated within. In both of the musical examples given earlier, these are contextualized within a syntactical frame. A listener hearing Webern’s *Quartett Op. 22* at its world premiere may not have had any syntactical frameworks to speak of (except in relation to its mutagenesis from tonality); a modern listener will have had syntactical associations built up (unless it is the first time they have heard serial music). Similarly, a listener at Beethoven’s world premiere would actually be hearing a syntactical language that profoundly pushed the leading edge of

their comfort zones; this historical context must be reclaimed if we are to understand Beethoven in the unfoldment of Western art music history. Further, some will argue (including Ramachandran) that there is a sort of vibrational syntactical architecture that all art will be in relationship to; thus, Webern, even at first listen, will be contextualized within this praxis. One will note that this praxis of inquiry merely extends outwards from those of biological/psychological filters and algorithms, “things as they are”/mediations thereof, etc. focused upon in this text, and merely highlights their relevance.

In the listener, coherence can be an internal experience: one in which synchrony occurs between that which is presented, and something inside of them. The ACM's, and the coherency apperception have been framed as ways of visualizing how this process occurs. As we've noted from neurobiological research, the subject presumably has to have had experience with the generative material at some level in order to appreciate it's hyperabstractions; just like Helen Keller, you have to have been initiated into it first (ostensibly experientially), and then you can participate in the iterative conversation, even if it is merely through a 'passive' experience. That is, if action-contingent MNS phenomenon explains the entirety of this operation. Yet the recognition of coherence is something that happens internally, in the body, in conversation with perception, experience, conditioning, and biology herself. It occurs instantaneously: like the state transitions on a cymatics plate, and I have argued throughout that we must reexamine many of our reductions of it, and understand the 'framer' in relation to the 'framed'; the 'signifier' in relation to the signified, etc.

The above mentioned syntactical coherencing examples can be correlated to an unchanging, or fixed coherence matrix, wired to appreciate a limited conversation; these are mimetic apperceptive coherence matrices. Another form of coherence matrices, as mentioned before, are changing; bioresonant and mutagenic. Because of their intimate contact with the continuum/flux, initiation into new conversations is intrinsic to their operation, as well as the hyperabstraction of the very coherencing process itself that these represent. In some sense, you could say that they are agents drawn to participate in the self-organization of the system itself, rather than self-organization reduced to a closed, or mimetic system.

Listeners wired this way will tend to appreciate new music, experimental music; music that challenges norms. Without this, the leading edge does not move forward. This concept of coherence matrices is meant to help us visualize how one is aligned internally; many humans are aligned, and basically conditioned into a fairly limited conversation, only prepared to recognize coherencing that mimetically produces a synchrony spike in response to those conversations they've been initiated into culturally. In these cases, they usually aren't interested in pushing the leading edge, and the intrinsic confrontation of the unknown it represents. The orders of coherence they experience will expand much like language has been shown to traditionally, at a fairly modest rate that reflects recursive processes and chaotic resultants in response to environmental and cultural constraints; they go so far, but no further.

I think it is significant that the biology seems wired for apperception of complex orders of hyperabstraction: new orders of coherence, implied and enfolded in the original, and unfolded in the art. This speaks to the power of metaphor, but extends beyond it. And cultivating a preference for the hyperabstraction of the coherencing unfoldment itself, or the coherency of coherency, is an evolutionary leap I believe is the emergent leading edge in embodiment. One might call this developing a preference for no preference (or at least no preference that excludes the rest of the field in a defiant act of self-valorization). So there is no ethical imperative about cultivating an implicit, bioresonant coherence matrix, as opposed to an explicit, recursive, mimetic one, unless one recognizes that our historical moment somehow necessitates the former as a counterpoise to a cultural momentum that has valorized itself into blind morphoteleological destruction of the earth and everything precious upon it, including the incredible creative faculty of the human dynamical system.

Important about music, in the broader sense, is the sense of coherence in unfolding temporal 'space'. Take away the last chord from a piece of tonal music, and generally the entire piece becomes incoherent in the listeners' perception of it. Take away the last note from a chance piece, and this is not generally the case. What is the difference in the orders of coherence exhibited in each case?

At the simplest level these coherence matrices produce a preference. But they are much more subtle than that, and exhibit in their orders of expression both explicate and implicate qualities; just as musicking algorithms and complex dynamical systems do. A culturally sanctioned ritual such as a Taiko drumming

performance will provide a simple laboratory for exploring the basic, explicate properties involved in most value-forming coherency transactions. The instrumentation, dress, and ritual activities of the performer will trigger a recognition in the listener of a normative cultural situation; thus, the coherence matrices will register a certain ‘validity’ to the experience from the start, which is primarily extra-musical.

From here, certain triggers further the categorization of the performance into ‘acceptable’ social ritual, and thus ‘acceptable’ musicking: certain rhythmic isomorphisms recognized in the percussion, familiar emotive attitudes by the performers, including their own self-ascription of expertise (transmitted through body language), etc. Often what would be considered a “bad” musical performance (with no extra-musical ‘interference’) may be assessed as a “good” or coherent social experience due to extra-musical elements involved which may further dull the listening faculties to bioresonant coherency apperception in favor of a mimetic apperception of ‘all the pieces together’, ‘appropriate’, ‘prestigious’, etc.

Because of their broad musical exposure, the coherence matrices of modern listeners will be much more intricate, with many layers of sub-lingual assessment that are often exaggeratedly extra-musical. These are both rendered normative by popular culture, as well as exhibit great breadth in their particular idiosyncratic features. This exploration describes primarily explicate orders of coherence matrices; they embody social algorithms for value, acceptability, etc.

The implicate end of the spectrum of coherency matrix expression functions in a completely different fashion. Where the explicate is a closed system, the implicate is by nature an open system. There are no closed systems in nature; thus the implicate coherence matrix is (by nature) of nature in her manner of operation. There is an inherent curiosity and experimental attitude about implicate coherency apperception that mirrors the intrinsic enactment apperception, and the geometries of the neural substrate. Instead of arriving at value judgments (“bad” or “good”), the musicking exists within a larger order beyond the listener’s intellectual comprehension (although their intellectual comprehension may contain a contextualization of itself within this larger order as an exogenation of intellectual maturity). Whether the musicking is “good” or “bad” is less important than whether the experience deepens the individual’s engagement with life itself, and the activity of coherencing they engage in.

The SLODE seeks to increase the competency of musical participants towards the exogenation of deeper and deeper orders of coherencing. It is, I believe, in alignment with Cage’s notion of experimental music, as well as Oliveros’ diverse methodologies. It is an embodiment of implicate intelligence; an intelligence not about reducing elements to atomized pieces, or about defining what is beautiful or not, but about unveiling new musical perspectives, musical experiences, musical relationships, musical directions, etc.: in each case, fundamentally new coherencing possibilities. From these may be extrapolated a deeper engagement with life as a

whole. One might say it is the difference between an argument and a discussion in objective.

The implicate methodology is simply to observe the self-organization of the system in response to an attentional inculcation; for the system both self-organizes intrinsically *sans* attentional inculcation, and simultaneously organizes in idiosyncratic fashion in response to intentional inculcation as a collaborator in the interactive field. This is not hyperbole; it is descriptor of dynamical activity which is **both a product of, and a generative influence upon,** the self-organization of the system²⁴⁹. Only metaphors of dynamical unity and diversity can engage this praxis competently. It seems that life systems in interactivity with attention self-organize in an isomorphic echo as a mirror of those underlying the generative activity of said attentional inculcation. Thus the enactment of non-intentionality and allowing things to be as they are, like chance operations and other emergent streams, are not devoid of generative activity, even if they may at times be devoid of reified content. Intention

²⁴⁹ Thus the end-goal of this inquiry is not to passively ‘do nothing’, as many observers have assumed. As a self-organizing organism actively enacting bodily engagement in the world, more activity is actually available when interpositions upon the dynamical interactivity of the system by explicate process have been reduced. In other words, to ‘do nothing’ as a conscious observer that is a reified fiction is to simultaneously become available for the enormous amount of life activity that is ever present – coherencing – that the psychological filters have veiled. The self-organizing activity of coherencing then organizes our attentional inculcations in meaningful ways that are vitally active, participatory, and involved with the enactments of bodily engagement more intimately than we could ever have imagined when abstracted from things as they are, the continuum/flux, and the implicate activity.

can then, from a deeper understanding, be described as reified content of the ‘conscious’ observer, and a distraction from this deeper understanding. Enactment with or without intention, the conscious observer, and/or reified content of any other type equally produces activity; in fact, evidence suggests that more activity is created, as suggested by the research cited earlier which exposes that the human brain is 20x more active in the default mode (Raichle 2010), and that the brains of mice exhibit unexpected and extraordinary hippocampal neurogenesis in the absence of auditory stimuli (Kirste et. al). The fact that the human ego wishes evidence to suggest that activity, creativity, and intelligence is commensurate to its ‘intention’ exclusively, is implicit and predictable, like everything else the self-same attractor creates.

One can observe that many definitions of creativity fail to elucidate this territory, and thus contribute to the poverty it unveils. For example, David Cope has defined creativity as:

“The initialization of connections between two or more multifaceted things, ideas, or phenomenon hitherto not otherwise considered actively connected.” In defining it, Cope has ironically revealed that it requires no special intelligence to operate, as life processes intrinsically satisfy this definition in their unbroken processual unfoldment, iteration, and interactivity (without the interposition of either human intelligence, or artificial intelligence).

He has further revealed a definition located primarily in atomized interactivity, and explicate process. In fact, if one considers intelligence to be intrinsically the interactivity of coherency apperception with our competencies, with knowing how, then the issue is not

whether or not we can create artificial intelligence: it is whether or not we can recognize that we've anaesthetized our public into an artificial intelligence: a capacity for hyperabstractive mimesis which is the caricature of intelligence, and nothing else²⁵⁰.

The coherence matrices operate as the underpinnings of listening, beyond mere brain function, as the organizing activity of listening. To the degree that it is on the explicate end of the spectrum, it is about categorizing known features of musicking and relating the experience at hand in relation to these; to the degree that it is at the implicate end of the spectrum, it is fundamentally about how we relate to the unknown, about what is about to unfold.

Establishing how we arrive at the experience of coherence in musicking, how this relates to vibrational coherency, and how this informs the compositional, performative, and tradition-generating processes, is essential. What are the deeper mechanics of this process?

If one observes experience deeply, one will see that the activity of preferencing only occurs in the psychological realm; there is no fundamental basis to it in the vibrational, just like 'approval'. At the level of the body and the ACM's, there is a movement towards a coherency spike that is then mediated through the psychology. In addition, in terms of filtrative processes, there is a movement away

²⁵⁰ Cope and others process' reveal that the explicate intelligence of computers cannot be creative without collaboration with the coherency apperception of a human agent (Cope).

from those things which do not seem to serve our functional integration with the environment. There then arises a dynamical interactivity therein: at times to move away from the movement towards, and at other to move towards the moving away. Human psychology is a complicated affair, those who look reason there must abandon all hope. For the psychology's purpose (in terms of our analysis of a dynamical system with a self-same attractor in the center) is its own existential perpetuation, and its own self-aggrandizement or valorization in the service of this end. To save itself from the perceived praxis of its own demise, across which is (paradoxically) infinite potential, *a posteriori* freedom, and of course, creativity²⁵¹.

The system is, essentially, always trying to harmonize itself. The only question from the psychological front is, will it move towards harmony, or away from it? Clearly harmony expands into a view well beyond Western tonality, pluralism, and even natural systems. This is analogous to our world, where the only questions we must ask ourselves is will we move towards harmony, or away from it? Towards ecological harmony, or away from it? Towards political harmony, or away from it?

²⁵¹ In order to frame a historically contextualized conversation, I have engaged in a rather directed critique of the psychology and the conscious observer, both as nouns; this has been vital in uncovering the territory necessary for this dialogue. Later on I will present a more balanced view of each that brings the entire conversation full circle. Psychologists will take heart in the foreshadowing that my theories do not spell the demise of their profession any more than they spell the demise of canonical Western musical works, merely a reorientation of the activities therein endemic of the self-same attractor.

This process involves an internal apperception which is an aggregate of accumulated algorithms, as well as cultivated sensitivities. Coherence exists in two forms: as an actual vibrational phenomenon in the system (the analogue here is to the direct experience) and as a psychologically constructed phenomenon. To the degree that it is a psychologically constructed one, it will be, in most cases, fundamentally self-valorizing, and also self-veiling in relation to the possibility of actually perceiving vibrational harmony in contradistinction to it.

Any one listener will orient themselves somewhere along a spectrum which includes, on one end, the actual bioresonant vibrational coherence of the system, and at the other, purely mimetic psychological process (insomuch as we equate the psychological with the abstractive). When an act of musicking exhibits coherence which is of the order of the coherence the listener has oriented themselves to internally, they tend to move towards it. They may express a preference for it, or they may allow it to inform their own musicking process, etc. Composition, rehearsal, and performance are all complex generative activities which enact the above recursively in relationship to a field of intrinsic enactment apperception. They extrapolate all of the possible listening experiences of potential participants, adjusting their playing, or compositional choices accordingly. They do this instantaneously, in an act of coherency apperception that marks the true centrifuge of human intelligence and skill.

Let's hone in on this a little bit more deeply, from the microtemporal level. This by nature must be a simplification and is only one example of how this may play out. A composer generates creative activity either internally, in their imagination, or

externally, on an instrument. This creative activity is musicking of some type: a phrase, a process, a timbre: any creative seed. The composer's listening activity apperceives not just their own personal experience of the musicking seed, but engages in an extrapolative sub-lingual exploration of literally all possible listening experiences and apperceived coherence matrices of potential listeners (from the perspective shared from the UCLA study cited earlier).

All of this is related to the internal coherence matrix that the composer has aligned herself to internally and used to inform each processual compositional unfoldment; all of this may happen in several milliseconds, or it may happen over 60 years (as in a piece realized at 80 that was intuited at 20). Over an entire compositional process, this may happen billions of times in recursion, until the composer apperceives a compositional coherency that signals to them that the piece is complete.

What is significant about this is at the level of the apperceived internal coherence, the opposite principle to listener as composer is just as true: composer as listener, or performer as listener. In other words, the activity of all performers and composers outwardly is generated by their listening: understood as this complex recursive process of creative activity alluded to above, which is always occurring, and which the sophisticated artist cultivates to a heightened degree.

The performer engages in a similar process. Once again, this is just an example; they execute the instructions given on the score; as they do, their listening faculty evaluates their performance in relation to all possible listening experiences

and apperceived coherence matrices of potential listeners²⁵². This informs their interpretive choices as they proceed upon a dynamical, recursive process that results in a new realization of the piece.

Similarly, the very nature of the internal enactment apperception reveals that the listener is sub-lingually enacting the entire processual unfoldment of the composer and performer, as well as theoretically all of the avenues they didn't explore, and from this apperceiving coherency. The degree of complexity involved is staggering, except when attenuated by two simple points: 1) this is not atomized cognition, where billions of atomized possibilities are individually being cognized; rather it is bioresonant and implicit cognition and 2) enactment is once again (like hyperabstraction) a metaphor for the actual neural substrate, its geometries, and their unfoldment. One could even theorize that as they listen, the listener discovers (sub-lingually, of course) a fractal pattern in this substrate that matches that of the music (as well as everything extra-musical), and that this is the actual occasion of the synchrony, the a-ha!, the apperception of coherency: the intrinsic discovery, and the joy therein.

²⁵² As well as all of their abstractive matrices of what music 'should' sound like, and what is culturally 'appropriate'.

Dynamical Listening Observations

Why is Cage so refreshing? Is it because I've listened to and studied the Western academic musical tradition so deeply, and been subjected to the 'ear training' Oliveros exposes, and all the heavy residue this leaves in my filters begs for remedy? Does Cage merely relieve me of that burden? If I were not a "trained" (one thinks of a trained monkey) artist, would I "hear" Cage the same? Maybe Cage's legacy is that he was so skilled at getting out of the Cage (and bringing us out with him)?

Listening to Four⁽⁶⁾, I can "hear" that he's not trying to get anywhere; in the multidimensionality of my listening, which goes beyond sound, to include the entire mirror neuron system, and even beyond that, to a total apperception, a wholity of attention – I can "hear" not only his intentionality of (non-intentionality), but the generative activity underlying that. Actually, I become it when I listen. The mutagenic, implicit, bioresonant, indescribable activity of this exquisitely inexplicable composer, brought alive through unfolding process beyond the atomized objects of Western civilization – musicking – is medicine for the atomized mind, wandering blind in the dusty hallways of its built perceptual universe.

Because in the context of the tradition (n) nothing (n) can happen; but when we step out of that, nothing (a) can actually happen, and so can a tradition (a).

Part Three: Resultant

First attentional inquiry

- 1) Become available for your experience in all of its multi-dimensionality.

Observe the generative unfoldment of it, in all of its detail; take inventory for several minutes.

- 2) Center yourself on the generative activity underlying. If you become distracted, don't push the distraction away, and don't pull it in. Simply bring awareness back to the generative activity underlying the unfoldment of your experience.

- 3) Play or listen to music while still maintaining attention upon the underlying generative activity. If you become distracted, follow the directions above in regards to dealing with distraction.

Coherency Apperception

Coherency is a phenomenon (nature); it is also a quality (human descriptive).

In evaluating the coherence of a concert performance, for example, it is difficult to distinguish what is coherency of the vibratory patterns in themselves, as they are; what is a conditioned pattern of mimetic coherency exogenated through the psychological system; and what is coherency arising from the social conditions of the event. i.e. these elicit an enjoyment which is complicit with implicitly non-musical elements of the concert hall, the surrounding social context, and surrounding ontological constructs. These constitute the 'built perceptual universe' of the Western canonical tradition, which have been erected through its embodied process as a 'larger historical body' of action and enaction.

What highlights the underlying territory is the implication, especially by canonical structures, that their music is eliciting pleasure in and of itself; merely out of the coherency of the vibratory patterns, when extra-musical elements are clearly being manipulated, as well. They further assert that their music is special, a historical anomaly that justifies a history of colonialism. What seems like spontaneous experiences of pleasure (from the erected frame of this assertion) are later discovered to be highly engineered, taking into account not just the conditioning process, but social complicity: the degree to which an individual is willing to be shamed for disagreeing with social assumptions in regards to what is defined as beautiful, or not. Believing

that Beethoven's fifth is **not** the epitome of Western superiority is tantamount to hear-say and flags one as an enemy of the state not willing to perpetuate the continuity of said state. Turning around and inquiring into this larger built perceptual universe (within which the local one we are looking out through is embedded), as well as the operation of its construction, has been essential to progress in recent musicological history.

It is an experience all of us have grappled with, to a lesser or greater degree, and one which Small highlights thoroughly in Musicking (Small 220-221). Emerging from the concert hall, one wonders: is the classical canon really an exemplification of orders of vibratory coherence never before achieved by humans²⁵³, a resounding cultural triumph? Or has that experience been manufactured; is it an example of manufactured consent (and veiling colonialist residuals still incessantly recursing in the dynamical system)?

One may then experience said enjoyment as a sort of guilty pleasure, as well: is this experience of enjoyment 'authentic', does it arise from intrinsic vibratory coherence? Or does it arise from unconscious (a) complicity with centuries of implicit power structures and their built, imposed universe? Built for reasons of their own machination? One can even go further and wonder how this is different from the biochemical responses imposed by a twinkie, for example: engineered not just through

²⁵³ As if no psychological filters were being manufactured in concert with the music.

'food' materials, but through the manipulation of social and ontological context with an eye towards in turn manufacturing pleasure (implicitly through manipulation of said biological systems)?

If I experience discomfort with this social context, as Small did, is this discomfort evidence of social deviance? Is it white guilt (for the Caucasian)? Is it discomfort with the implicitly manipulative nature of the conditioning process itself, especially as realized in the 21st century? Is it a sign (exogenated through the organisms' nervous system) of a historical imperative that the Western classical tradition adapts to the post-colonial, cross-cultural collision, and its corresponding re-cohesion? Or else perish? All of the above simultaneously?

In the 21st century, we are in the complex and rather multi-faceted situation of reclaiming our heritage while simultaneously coming into intimate critical analysis of her conditioning activity, power structures, and *a priori* assumptions as exogenated through and experienced in the built perceptual universe of the human organism at a greater level of detail than ever before. One invariably asks: when was consent obtained for this conditioning activity?

Like a rape victim reclaiming their body after the violence enacted upon it²⁵⁴, one arrives at the firm conviction that I have the right to define what is done to my

²⁵⁴ Critiques of overexaggeration must be met with strong critical autonomy, just as the silencing of rape victims as “overexaggerating” must be similarly met. Metaphors are just metaphors: strong metaphors are just strong metaphors-, gestures upon the stage: what must be understood is what they point towards.

body, and the body is decidedly the instrument being conditioned. Once one realizes that the entire conditioning process has been enacted within the local built perceptual universe, which is in turn enacted in the body, this inquiry becomes highlighted even more poignantly: it becomes immanent, relevant, and vitally essential.

What is done to my instrument is my business, and historically the confrontation of this and its implications is inevitable. We have avoided it habitually because it inherently leads to the necessity of adopting ethical restrictions on the mediation of the human instrument. Discomfort with any line of reasoning that would lead to the limiting of the rights of corporations and governments to unquestionably over-mediate our perceptual reality through advertising, education, etc. is avoided like the plague in our modern culture. Acoustic ecology is treated as a trite indulgence; sonic meditations as ‘the new age’. Just as critiques of corporate use of natural resources is avoided, so is their treatment of consciousness as so much natural resource to be exploited for financial gain avoided as a topic of conversation. Why do we comply with this?

What is veiled is a power structure inherent in the generative activity of consciousness employed. This conversation arises from a historical understanding of the necessity of the cessation of the morphoteleological activity, as well as an embodied understanding of the implications of its continuation if not confronted. This is a residual of the activity of the self-same attractor recursing in the dynamical system; in this case centuries of assertion of power as a recursive activity have reinforced a built perceptual universe, and its shared social complicity, wherein to challenge any power

structure is blasphemy, and only to invite one's personal demise. This will only end when we cease to recurse it in the system: it is that simple, just as music is that simple, as well. One may start to wonder, with the vestiges of colonialism, sexism, the self-same attractor in the dynamical system, as well as stigma upon heightened states of consciousness and other outmoded activities exposed in this text: is there someplace in the human nervous system that stores the underlying generative activities exogenated by these, so that even years after reason has seen otherwise, they continue?²⁵⁵

The generative activities we participate in, both in our perceptual universe, as well as in the larger shared one, recurse; they reinforce themselves and contribute to the universe we create and inhabit. Thus the operation of our coherency apperception becomes vital to unveil, for it is what underlies this process organizationally: it is our intrinsic participation. That improvisatory note we hit may have seemed spontaneous, but it may not be, if we understand ourselves more deeply. It is the resultant of our coherency apperception; unless we know whether this is mimetic or bioresonant in its generative activity, what seems creative may be mimetic, and what seems mimetic may in fact be creative. In music, we must take response-ability for our generative activity, whether or not the unveiling of such seems impossible from traditional avenues

²⁵⁵ If so, then the requisite need for embodied process has been that much more reinforced.

of discourse. If we do not, we unconsciously (a) recurse and perpetuate power structures, as well as mimetic activities of other kinds that arrest the self-organizing genius of the dynamical system²⁵⁶.

The entire dialectical progression unfolded above highlights the immanent necessity of embodied inquiry to rigorously unveil the praxis of direct experience, the coherency apperception, and our mediations thereof. This is the territory in which we discover our generative activity *as it* is, and not as we believe it to be, or as we have been taught to believe it is. And this is how we end its unconscious (a) recursion. Are we willing to unveil our generative activity when the consequence of this may be discovering that it participates in the violence of the manufacturing of consent in ways we have not yet realized? For many of us in the 'fine art' division of the musical world, this will be true. Do we rely on the interposition of 'musical authority' to convince our audience of the wisdom of their patronage? Do we rely on a similar imposition in our musicology to convince institutions to award us research money? Do we believe it is possible to operate otherwise? If not, then there is no hope for music. Our future is merely an archived past as the momentum of the colonial morphoteleosis recurses back upon us, like the mouth of the ouroboros upon its tail.

The same attitudinal violence which crippled the cultural momentum of native cultures (as the exodus of the young severed their continuity, and dynamical interactivity was replaced by the atomized activity of archived artifacts) will cripple ours, as

²⁵⁶ Which human genius is the *facile* of, and not a separate operation from.

well, as the morphoteleosis inside of each will enact an exodus towards the lowest common denominator (in pop-music, in classical music, and in every other domain) to survive in a fiscal jungle. The living continuity of the implicit creativity of the human oeuvre will thus be broken; its dynamical interactivity will dissipate into atomized artifacts in reduced interactivity, a sad caricature of its intrinsic dynamical possibilities.

Only embodied inquiry ends this recursive cycle of dissipation. The self-same attractor will hide its activity, the morphoteleological impulse, behind arbitrary filters of the 'unconscious' and the 'unquestionable' as a continuation of its activity and self-perpetuation. It takes an extraordinary human being to be willing to engage the embodied process deeply enough to uncover territory where they discover the ways that they have participated in power structures, and then to end these. We are all that extraordinary human being; the embodied process as a rigorous laboratory is not the terrain of the few, as canonical competence and intelligence has been projected in historical frames: it is a human birthright, as illustrated by the presence of the mirror neuron system, the apperceptive mirror network, the apperceptive coherence matrices, the coherency apperception faculty, and the immanence of direct experience. We are, quite simply, designed for embodied process and excellence as a vehicle for human intelligence, creativity, and processual mastery.

Thus the *epoché*, the cognitive turnaround, and all other metaphors for the cessation of the morphoteleological impulse also radically instigate, through the but-

terfly effect, the cessation of the self-same attractor throughout the system. They represent, and begin to turnaround, the violence exogenated through the interposition of these activities as rape, war, genocide, manufactured consent, assumed canonical superiority, etc. in society. This is the ultimate social deviance: to refuse to participate in veiled forms of violence that perpetuates power structures, and to boldly exogenate the reautonomization of consciousness. I believe that Deep listening, pedagogical inquiry, embodied inquiry, implicate education, and emergent streams in the arts all celebrate, as I do, the hyperbole and beauty of this particular form of social deviance, and if this metaphor be understood rightly, can act as a bridge to social, personal, and global coherence unprecedented.

Coherency apperception is much more than our perception, but our perception is a window into it. Similarly, it is much more than our musicking, but our musicking is a window into it. Whatever music we make is outward evidence of this activity as it operates within us. Once we realize that the vibrations we create, is the recursive generative activity we are iterating (or re-iterating) in the system, we become extremely interested in discovering it: what is the generative activity underlying my activity? What is the relationship between the vibratory patterns of my musicking, and the unfoldment of the world I live in? What is the relationship between the vibratory patterns of my body, and this unfoldment? At first, the answers may seem impossible to conceive of having an apprehension of; as mentioned before, even simple systems are complex beyond our modeling capacities. But these limits only exist in the explicate realm.

It becomes apparent very soon: it has been in front of us, or rather inside of us, all along. The direct experience of vibration, whether our own activity, or that of our musicking, is the answer to the question implicit. We are vibratory instruments: it is through ourselves that we may know the isomorphisms between our musicking, our consciousness, and the vibratory activity of all natural systems. It is as if our neurology contains within it a veritably Benoit Mandelbrot, ready to reveal the secrets of complex pattern to those willing to inquire. It is merely for us to stop, to listen, to take 'note', and be willing to allow our entire musicking to be reoriented upon this praxis, and to allow the implicate to unfold.

A mentioned earlier, I believe cognition at this time in history is primarily manipulative. It is primarily involved with filtering out certain sounds to create a normative experience that conforms to a pre-conceived, or mimetic pattern. The tension between this activity and the pleasure elicited by hyperabstraction of new patterns bioresonant and isomorphic to the rest of nature marks the unfolding history of art.

The apperceptive coherence matrices represent a fluid system that can be made to conform to these pre-determined patterns, or enacted in its potential for the apperception of coherency itself. Coherencing is an unfolding, unbroken activity; our potential is to apperceive its unfoldment in similar unbroken fashion. Pre-meditated patterns represent a safety net of comfort in the psychology. As long as habitual patterns of conforming sound continue to dominate our acoustic landscape, we build our own prison: the key rests neatly in the lock because we put it there and forgot about it.

As artists, we have a response-ability to take command of our own cognitive instrument, to master the only instrument given to us, rather than artficed by our own hand: we have a response-ability to involve said processes' intimately with our art, because we are no longer in the dark as to their operation. Denial is no longer an option.

The *rasas* described in Indian musical theory (Coomaraswamy) are akin to a 'menu' of coherency apperceptions, which is different from a set of pre-determined patterns; I believe it is difficult for Westerners to understand fully the nature of these 'emotional moods' from the reductions of emotional process we have been taught to participate in, as they represent vibratory coherence of a heightened degree, an activity which itself has been stigmatized in the West. However, we have a memory of these states from our religious past, and these can serve to aid us in reclaiming this.

The *rasas*²⁵⁷ are not the infantilization of human emotion most prevalently propagated in the Western world. An apt analogy would be if one were to hear a Bach piece, and describe it as a 'clever sitcom theme'. The statement possesses a fundamental misapprehension of the nature of the coherency competence exhibited in Bach: thus these 'higher emotions' can seem lost in the incessant noise of modern culture, and individuals must make a corresponding effort to re-contact them.

²⁵⁷ Nor are they reductions of generative activity exhibited in Ramachandran and Hirstein's analysis of *rasa*, which perfectly mirrors their interpretation of neuronal activity in confusing signified and signifier. Once again, in the end coherencing is always the signified.

What has been labelled as mystical experiences, angelic encounters, etc. throughout Western history can be understood simply as the experience from within a dynamical system that has come into profound synchrony with the implicate: that has come into intimate contact (and thus interactivity) with enfolded orders of coherencing (and thus organization) in the system, beyond normative experience. These are then labelled with the signifiers mystical experiences, angelic encounters, etc. which are inevitably reductions, and the analysis is no different than signified/signifier across all domains. Just as music is a signifier for the vibratory coherencing it exogenates, so is a mystical experience, a contemplative state, a heightened emotional coherence, etc. We don't have to answer the question of whether or not 'they' (the higher emotions) are 'real', any more than we need to answer the question of whether or not musicking is 'real'. They are a signifier for the vibratory coherencing enfolded in the system; that is what is 'real', if reality must be pinned down, and the emotional experience is merely a resultant of that activity as it impacts the human organism.

Sadly, in response to centuries of tyranny by religious control structures which systemically suppressed these states of heightened coherency (to the extremes of shaming and guilting, ostracization, and even torture), we have too often cultivated (in reaction) an overly atomized noumenal landscape (characterized by the scientific mind Schopenhauer described) wherein we have retained the suppression of these states of heightened synchrony, as well as the stigma placed upon on them – even though the authority structures have ostensibly been removed!

It is most certainly a classic case of throwing out the baby with the bathwater. We must understand that the importance of these states— whether labeled religious experiences, or anything else – is concomitant to the optimal coherencing of the dynamical system, a consistently integral phenomenon throughout the history of humanity, and a vital element of the activity of the dynamical system of the human organism (and one which controlling the modes of production of [consciousness] has been hotly contested since the dawn of humanity, and for good reason, due to its immanent value).

In music, where it is absolutely integral to the operation of our art, to not reclaim it is a terrible negligence. To interact with deeper and more coherent enfolded orders in the field – the activity of the coherency apperception - is arguably the singular province of human beings; what makes us human²⁵⁸. It further reveals why religious expressions of music have been so essential to the unfolding of musicking historically, as this praxis represents one of extreme value that had been outsourced to religious authority; we do not need to repeat the mistakes of religious authority to appreciate the fruits of religious music.

²⁵⁸ Especially as the tired old argument that humans are unique because ‘we communicate’ has been thoroughly squashed. Of course there is something to inquiring into *why* we are so interested in defining a singular human quality; that being said, I believe the coherency apperception is a better candidate than anything I have seen placed upon the table so far.

It is a vital historical moment in reclaiming this understanding; in the reaction against religious authorities and the implications of their social activities historically the continuing stigmatization of heightened states is an overt and blatant overreaction, and a sad perpetuation of an unnecessary suppression. These states represent a dynamical system at its highest operating capacitance, its peak bioresonance, as well as the possibility of transmitting that to other dynamical systems (through musicking and other means). In fact, taking the religious authority out of the equation (removing the middle man) is a radical historical movement towards unfolding an oeuvre of humanity wherein the reautonomization of consciousness liberates man and woman from the tyranny of outside authorities. The optimal function of one's dynamical system is now ostensibly in our hands. In perpetuating the oppression of dominant streams of religiosity by-gone (by keeping the direct experience of these enfolded activities stigmatized internally) we have become the oppressors ourselves. They are not any of the signifiers we have ascribed to them; they are activities which it is our birthright to be in intimate interactivity with²⁵⁹. As artists, it is further our birthright to exogenate them, and to model and embody their free exogenation as outlined above²⁶⁰.

²⁵⁹ Just as the neural substrate is not any of the signifiers we ascribe to its activity, etc.

²⁶⁰ To say that it is reduced into notions of mysticism etc. is not to belittle these understandings, reductionism in this case is a product of the functionality of languaging and is not in and of itself a problem; the problem is when the

A couple thoughts on the empirical unfoldment: we could say that spaciousness is the purview from within an expanding system; stillness the purview from within a coherent system; etc. as useful observations and metaphors, and begin to explore the praxis of intellection and empiricism as it collides in the complex dynamical system of the human organism, as experienced by human consciousness. Because our dialectic is firmly mature, all is understood to be observation of the unfolding activity of the dynamical system, and no ascribed thingness is assumed.

So what is being disseminated is not a pattern of dominant to tonic, or a predilection towards minor 9ths, or anything of that nature. What is truly being disseminated is the actual vibratory information, the coherency patterns as they unfold. These exhibit generative qualities that the music transmits, and that is the actual impact of our art.

Music then is a living metaphor for the vibratory coherencing it disseminates - this may sound esoteric from a certain frame but in fact musicology has been talking about this for hundreds of years. We may speak to how music is transmitting a certain worldview, a pathos, the composer's angst, a new ideological wave in the avant-garde, etc. All of these are reductions of what is actually occurring, and actually being

reductionism becomes an *end in and of itself* and the interactivity with it is mistaken for reality, rather than signifier. Thus the metaphorical dialectic becomes the fool's gold by which we abscond our own natural wealth, if forgotten.

disseminated - it is the vibratory coherence patterns, discovered in the apperceptive faculty of the artist, that are being disseminated - recursing in the system, and transforming its mutagenic activity.

The analogy is between the understanding of what is being hyperabstracted in the neurology as being some conceptual activity, or the actual activity of the neural substrate, its neural geometries, as well as its indeterminate activity as a CDS. If we believe it is some conceptual activity, we confuse signifier with signified: there is always a more fundamental generative activity animating that conceptual activity.

Once again, if we say that 'joy' is being disseminated by the music, we confuse signified with signifier; what is actually being transmitted is a vibratory coherence pattern, and the generative activity it elicits in the system. Discovering this in our own embodied process, we become the conscious agents of the impact our musicking has upon the world.

We can now ask ourselves, what is the purpose of competencies, our knowing how, our tools? Reybrouck has pointed out that musical instruments can be analyzed as extensions of the body (Reybrouck); they may be further analyzed as extensions of our embodied process, and the interactivity therein. We have many tools in the modern age that extend our bodily engagement: the computer, our vehicles, our toothbrushes; I include our competencies in this list, for they exist in the field of bodily engagement, as well. Whether musical instruments, or ideas, or algorithms, or biological filters; our tools are used in collaboration with the coherency apperception to facilitate coherencing - either in the explicate modus, or in the implicate.

The interactivity of these tools with the CA, like the interactivity of the Bio/Psych filters with direct experience, may be seen as an essential praxis by which the entire activity of natural coherencing may be understood, as well as inquired into more deeply.

We can frame musicking in terms of a set of competencies (instrumental skill, compositional skill) that operate in concert with, or interactivity with, the CA; they are organized by it as the enfolded order, and this produces musicking. Coherency competence then becomes the fundamental activity of musicking, and the most primary to cultivate – as one's idiosyncratic CA is the generative source of all of their musicking. Both that which they create outwardly, as well as their internal listening experiences.

The transformation of the CA and coherency competence are not separate; in other words, to enact the former cultivates the latter, and vice versa, in dynamical interactivity. As the coherency competence expands, so does the organization of musical competences into higher orders of synchrony and coherence, as well as processual sophistication. Thus the competences themselves become organized by the implicate as disentanglement liberates them from the tyranny of the projections of self-same psychological process. It should be obvious that this facilitates musicking in the canonical field, as well as in the avante-garde as presently defined. I envision a musical field where pedagogical listening and embodied inquiry (which intrinsically includes Deep Listening) are married to extant methodologies towards an expanded field of excellence in music.

The implications of this become even more expansive as we apply them to the terrain of musical process. Musical process, like psychological process, has the potential to become the explicate expression of the implicate activity. Once again, a seeming hyperbole but actually a very real possibility that has already been realized in a myriad of ways. For example, chance operations realize implicate possibilities in the dynamical field through explicate means. The sonic meditations, as well, facilitate the realization of implicate musical possibilities in the dynamical field through the interactivity of the group, through explicate means.

Interactive art installations that successfully erect a coherent ecology of interactivity facilitate the implicate possibilities in the field in the same way that a natural system does. A natural system ferments the conditions through which life processes may express the implicate in activity - and so can interactive art installations when the artist is sensitive to this inside themselves. When they apperceive it in their bioresonant laboratory of direct experience, and exogenate it.

These artistic activities become a sort of living activity - synecthodiadosic - that ferments anew, rather than reifying and freezing. The key is in realizing that what is being disseminated is not the apparent reality of the perceptual universe - but the coherencing reality of the vibratory universe they are a window into. When this is apperceived, one performs a Bach score and becomes the instrument for exogenation of the coherency potentials Bach discovered in his embodied process; thus, Bach lives

through them. When this is not present, they become merely the instrument of mimetic execution.

To apperceive is understood to involve the entirety of attention - the fragmented poverty of attention considered in terms of the 5% of brain activity cordoned as the conscious observer gives way to this entirety, the activity as it is, rather than how it has been reduced. Thus to apperceive the synechtdiadosic nature of reality, and art, is to apperceive it completely. In alignment with the multi-dimensionality of consciousness, and process, as well as the fractal nature exposed by Mandelbrot, we can make an analogue between listening to listening, and the apperception of apperception, once again.

This should illustrate what it means to actually apperceive a coherency potential, as well. It is never understood fully in the intellectual frame - for the simple reason that this frame is a reduction of such, and the implicate principle comes into play again. The artist, at some point in their embodied process, apperceives a coherency potential with the entirety of attention. A coherency spike in the field elicits their desire to realize that particular coherency potential as musical composition, and they proceed to pursue this processually.

Now this may occur at different points in the process for different artists, and unfold in various temporal spans. Mozart seemed to gather the entire composition all at once, and then furiously translate it. Beethoven, however, would develop themes, and then painstakingly go back and forth between them in interactive development

(Bohm and Peat, 156) (Cope 81-84). I argue that, throughout this process, the intrinsic enactment apperception of the field of coherence potentials that includes the listening experiences, extra-musical elements (a la Small's analysis), etc. of all of the potential concert-goers is implied, and essential.

As Beethoven develops one theme, his coherency apperception explores the exodiadosic possibilities of that particular avenue; he changes his mind and explores another permutation, and concomitantly the exodiadosic possibilities of that one. He is reticent to commit, exploring and painstakingly re-exploring multiple avenues. Finally, at a much later stage in the process than Mozart, his coherency apperception registers the diadosic potential he wishes to exogenate via a synchrony spike in the field that he chooses to be the 'best', and the completion of the piece is oriented by that.

Which brings us to what I believe to be one of our most fascinating inquiries. How does a composer know when a piece is finished? I believe there is a sort of inherent stop signal (like we observe in the DNA), and that essential to the art of composition is the capacity to listen to this, to navigate complex processual unfoldment coherently, and to know when to stop.

In practice, this is a sort of simple intuition. In terms of our analysis' of CDS, I will explicate my view: another coherency spike in the field marks the stop signal that the composition is finished. This spike is a rather fascinating one: taking into account the mirror neuron research out of UCLA cited earlier on, I believe that the composer is exploring not only all of the musical possibilities in interactivity with their own listening activity, but also that of all potential listening activities. These are in

turn inseparable from interactivity with ‘extra-musical’ elements (a la Small’s analysis), and this is a rather extraordinary thing. The composer is enacting every possible cognitive experience of their art (including indeterminate fields therein), which includes every possible constructed perceptual universe - of their listeners - in order to arrive at a rigorously constructed compositional whole.

Of course in practice this is done by the mirror neuron system, as well as the rest of the organism, bioresonantly, and not by ‘the composer’; just as most of the activity of the brain is intrinsic, and not extrinsic, so is this true processually. This coherency spike, then, is the human instrument signaling to the conscious observer that whatever pattern of activity she has discovered in her process at that moment, is coherent. It is veritably a pre-cognizant apperception of the unfolding of the set of instructions that comprise that piece of art. And while Mozart may seem to have a single coherency spike as a temporal synchrony, Beethoven illustrates a process wherein multiple synchrony spikes guide the process, until what one may term ‘a synchrony spike of these synchrony spikes’ (as an enfolded order of their enfoldment) signals completion. This illustrates two things: 1) that the composer is discovering enfolded orders of organization, and 2) that the apperception of apperception²⁶¹ very concretely exposes the processual unfoldment of creativity.

²⁶¹ This is true from many different angles. The composer may be seen as apperceiving through the listener’s body, they may be seen as apperceiving the very nature of apperception itself, etc.

In fact, the unfoldment of the coherency apperception in temporal span and rhythm is a dynamical study in and of itself. The personal story from David Cope's embodied process alluded to before illustrates how the emergence of coherency apperception is intrinsically inseparable from those of life processes themselves; in this case, coherency apperception predates the compositional unfoldment (Cope 36-37)²⁶². In improvisational music, community music, and other forms of music, the process described above may be seen to be occurring instantaneously: like Mozart and Beethoven, it is precisely the same process of coherency apperception, unfolding through idiosyncratic process in various temporal spans, orders, and rhythms.

A performer of the pieces written by Mozart and Beethoven, for example, will explore performative possibilities and similarly receive synchrony feedback in the bi-resonant laboratory of direct experience that they use to orient a performative realization that exogenates the diadosic possibilities they have chosen, aligned with, or become resonant with. If we made a temporal histogram of these spikes, they would in themselves form an idiosyncratic rhythm²⁶³.

²⁶² One can imagine, for example, scenarios wherein an individual spends 40 or 50 years realizing a coherency apperception, a synchrony spike that occurred during childhood.

²⁶³ This is similar to the method of chaoscopy, wherein chaotic resultants of a system are tracked for systemic patterns that imply a higher order of organization. I wrote a piece of the same name, based upon the same process used in "Piece for Non-

So then competences in music may be oriented around facilitating this process. In musical education, for example, we can use this understanding to focus our affairs towards helping our students to develop their explicate competencies (their tools) in concert with their coherency apperception competence, to understand this, and to employ it consciously.

The relationship is one of *facile* - to make easy. Essentially these tools may be seen as analogous to the invisible DJ alluded to earlier - their perfect operation is found when they become a facilitator of heightened synchrony in the dynamical system, and not elements extraneous to this. What I want to stress from the above conversations is the choice that the various actors made - the choice to exogenate a certain diadosic possibility over another. In my view of art, the artist is translating this diadosic possibility via their competencies. It is more artist as arranger of music already written by the universe; or artist as facilitator, in alignment with the vision outlined by John Fox (Camlin).

This can be seen mirrored in the Greek word for *techne* as discussed by Heidegger in Poetry, Language, Thought (Heidegger 57-60). Heidegger stresses how the ancient Greek understanding of *techne* was to reveal something that was already

Local Butterfly”, where the performers did not outwardly perform their ‘internal performance’ (see score); they merely signaled the transition from sound(ing) to stillness by the striking of a gong (16 performers, 16 differently tuned gongs). Thus it is exogenation of the chaoscropy of their internal bioresonant unfoldment.

there, that was already present, not to create something new. This illustrates the purpose of competencies accurately. They are not meant to become an end in and of themselves.

Imagine several people are walking down a beach that has been blessed with an abundance of small stones of every color, shape, and size. As they walk, each collects a handful of these stones. By what indeterminate process does this occur? Where their eye lands in each moment, what defines this? Why does one eye land on that red stone, and another on that jagged stone? How much of this activity is ‘hidden variables’, and how much is idiosyncratic predilection?

This is the situation in the arts: we are all walking down a proverbial beach, selecting stones. These stones are the diadosic possibilities, the coherencing potentials we discover and exogenate. Why do we choose the stones that we do?

Like the examples given above in regards to compositional process, some subtle synchrony spike in the field causes us to look one direction, and not another, and consequently choose that stone. Thus the CA is in operation in all life processes, and in the end, we don’t actually choose (unless we have ‘chosen’ our coherency apperception consciously through embodied unfoldment). Even to see one stone, and not the other is implicitly guided by this process. And this is in turn an illustration of the nature of consciousness, in bas relief.

I believe we are oriented to certain coherence potentials (as visualized by the apperceptive coherence matrices) that will elicit the coherency spikes that guide our

unfolding process. And these can be sublingually stuck in mimetic recursions of extant synchrony possibilities, and that this is one of the most important phenomenon for us to uncover as artists.

And the only way we can uncover this is through embodied inquiry and process. And this is what we do. For one artist, this translates into improvising for hours on end at an instrument, exploring different coherence avenues, down one avenue, down another, implicitly this bioresonance, and then this one, just as Beethoven did. In this dialogue, we gradually deepen our coherence apperception and unveil our underlying generative activities.

In jazz, this improvisatory dialogue is self-evident. In Indian musical education, the interactivity of the guru/shishya relationship facilitates this. In algorithmic music, the process of listening to outputs and making coding changes facilitates this. It is the laboratory of direct experience in operation, and the number of potential embodied processes that unfold within it are the number of human beings that have existed on this planet. And we exogenate our life processes, not just musical processes, in exactly the same fashion²⁶⁴.

For each, the generative activity of one's apperception is both unfolded through process, as well as being unfolded by said process. Through rigorous observation this may be apperceived; this is the apperception of apperception. Only if we

²⁶⁴ For an illustration of the simultaneity of life processes and composition, see (Cope, 36-37).

penetrate the false veneer of the ‘unconscious’ may we fully realize this, and further realize our own generative activity, rather than mimetically recurse it as a chaotic resultant of the habitual enactment of learned competencies. It leads us back to bodily engagement, and the continuum/flux, as stressed throughout.

Thus I advocate Deep Listening and pedagogical inquiry as an augmentation to our embodied processes as it emerges in this moment, as well as embodied inquiry and implicate education and everything else discussed herein. Each facilitates disentanglement and the revelation of the direct experience; the synecthoanagronistic possibility of processual unfoldment. For some of us, this is literally a life or death situation: it constitutes the very *a posteriori* freedom of our consciousness; whether or not what we have discovered in our own LODE will ever be exogenated, discovered by others, and have an impact upon the world.

So the artist, rather than creating something new, is selecting from a set of possibilities²⁶⁵, and the artistry is more in unveiling these, than in being the creator who creates something else in one’s own image. The self-same attractor. Of course there is an artistry to unveiling these possibilities so one can become their instrument; once again, why does one actor choose that stone, and another that stone? As we examine CDS, their recursion, the evolution of sonic consciousness, and everything else in this paper, we realize that the ‘choice’ is in fact a resultant of infinite life processes,

²⁶⁵ And even ‘selection’ is a functional compromise to languaging and the dominant paradigm.

and that the conscious observer really is much more a facilitator of a much larger activity (presumably about 95%, if the analogy holds true), as well as defined by their bodily engagement, their interactivity with this field.

So then how do we change that ‘choice’? Clearly, if the conditions of the system impact the resultant, then in changing the conditions of the system, we will change the ‘choice’. But even those activities of ‘changing the conditions of the system’ will themselves be a resultant of the system. Throughout we have practiced attentional inquiries, with a stress on allowing unfolding process to be uninterrupted (as in musical unfoldment) by extra-processual inculcation. The fruit of this inquiry is to observe that engaging in various attentional activities changes the activity of the system., and that this is how we change the conditions of the system, as well as the apparent ‘choice’ which is actually resultant of those activities. In other words, by exercising our attentional faculty competently, we change our musicking by influencing the dynamical system which outputs it.

Some will argue that I have done nothing but put a fancy name to intuition in coherency apperception. Intuition can be said to be an explicate activity of coherency apperception, but it is not coherency apperception. Certainly one analysis of musicking is that all musical acts could be said to be directed by intuition in some fashion; whether it is an improvisational lick played, the number of bars in a large scale form and how they are organized, the date of an opening, etc. In terms of intuition, what my work unveils is that there is an orientation to that intuition. The intuitive faculty will ‘intuit’ based upon this underlying orientation, which is signified by the ACM’s.

One man will intuit in the runnel of one pattern of vibratory expression, another woman will intuit in another: why? What activity within the human orients the intuition, if we are to use intuition as our musical metaphor? It is coherency apperception. This underlying orientation, or generative activity, is primarily unconscious. It is what is actually driving the exterior activity labeled 'intuition'. Intuition, like musicking and perception, is a window into the coherency apperception, but is not the entire activity.

So I am also pointing out that, unless we bring this underlying generative orientation conscious, we continue blindly, blind to the generative activity that our musicking is enacting through the activity of our musicking. When intuition is considered esoteric and otherworldly, we do our selves a disservice. We can dissect its activity as lucidly as we have dissected other musical and cognitive processes herein. If we consider ourselves competent musicians, is it enough to be instruments of mere blind mimesis, and call it an act of intuition? The greatest challenge to a musician is the confrontation of the momentum of this self-same inclination to embrace the safe haven of the 'unconscious' and recurse mimetic, self-valorizing generative activities rather than inquire and become a conscious agent of the unbroken processes of life.

So it is a call to become more aware of the underlying generative activities animating our exterior activities; clearly, I advocate embodied awareness, inquiry, and Deep Listening strongly because I believe these represent quantum leaps forward in the tools we have available in this regard, and ones which respond to a historical imperative to counteracts certain overemphasis' on the explicate mode of understanding,

unconscious mimesis, etc. But simply integrating this inquiry, this attitude towards musicking, into our already under-way musical process will be extraordinarily impactful, improving the field of musicking greatly towards more explicit exogenation of the activity of the implicate, whether or not we wish to become full-time inquirers.

It has been shown throughout that what is suggested is not foreign or irrelevant to canonical expressions or any other idiomatic field of musicking. The point is that historical momentum towards stagnant pools of self-valorization, as well as unconscious reiteration of acculturated limitations, are each fueled by generative patterns animating them, and a simple examination of cognition reveals that no one can wake us up to/from this but ourselves: it is entirely an inside job. So it is up to us if we consider what is 'unconscious' to be untouched by our embodied process; like the humans of the same name (untouchables) the activity will disappear behind the veneer of unconscious filters, and with it, the path towards heightened awareness.

We have come under the notion that there is a 'conscious mind' (n) and an 'unconscious mind' (n). Certainly it will be noted that both of these are conceptual filters placed upon a vibratory activity. Certainly there is an unconsciousness (a) if we choose to create that. As professionals, we are under the onus of being clear on the fact that vibratory activity as it is, rather than pre-meditated mediations of it, are the fundamental truth of the matter. Certainly there is a conscious purview, and activity beyond that may be labeled 'unconscious' (a); the problem is that the notion of the unconscious brings with it an implication that it is territory impossible to penetrate. The resultant is resignation to permanent residence within a limited domain, as well

as recursion of the self-same attractor in far too many cases to ignore. In terms of musicking, I believe that whatever is considered unconscious should be taken by the forelocks and brought to consciousness by the competent musician interested in rigorously facilitating living culture, as well as a living activity of musicking within themselves. It's simply the leading edge.

So coherency apperception may be said to include intuition, include perception, include ideas about music, include experiences in the body, include all of these and more - but fundamentally be more than them. In fact, it is the generative activity animating them, and so the mistake is to notice the correlation between one or the other, and musical activity, and stop there. To confuse signifier with signified. From the purview of the conscious observer, coherency apperception is implicate. From its own purview, the unbroken activity of life is implicate, and the reduction of musicking into cycles of endogenesis and exogenesis is merely a functional division, not to mention vain human activities of claiming that creative activity as 'their' own. In other words, we are nature in her manner of operation. Not 'us' in our manner of operation.

At least in terms of the psychological analysis. From another perspective, as 'us' is nature in her manner of operation fundamentally; bio-resonant and not a product of the self-same attractor in the system, art is 'us' in our manner of operation. But only to the degree that we realize that 'us' is the actual vibratory activity of the complex dynamical systems that we look out from, and not the psychological abstractions of such. Not our nouning; otherwise it is better just to leave it alone.

As mentioned earlier, only hyperbole can penetrate the fullness of the territory of our inquiry, for the poverty of languaging and intellection inevitably becomes exhausted as we approach the inexhaustible creative activity of the implicate. If this is not enough to humble 21st century human beings, then I fear nothing will, and we certainly need to be humbled. For in the face of the implicate, all of our gadgets and techno-trickery, all of our synthetic arms, all of the instruments in our scratch orchestra - are nothing.

The implicate methodology: wherein you inculcate a generative attentional activity into the system, and then observe what is emergent - it is a laboratory wherein we learn how to cultivate the emergent properties of the system. In some ways this is exactly what music is, always. In education, this is tantamount to cultivating the child/individual as they are, as to how they have been indoctrinated as statistical complexities (in the realm of sensorimotor dependencies) of the civilization²⁶⁶.

In describing the hyperabstractive activity of cognition, the iterative unfolding of dynamical systems, and the vibrational properties of cyclicity, amplitude, phase reinforcement/cancellation, etc. it should be understood that we are describing one process, observed from different purviews. The psychological filters may construct a built perceptual universe so convincing that we forget that we are in a built perceptual universe. In the return to the continuum/flux, we literally return to who

²⁶⁶ It is through being an educator that I, in the end, learned this.

and what we truly are.

In my own work, I went from being an embodied bioresonant dynamical system - as an improviser and traditional composer - to being a programmer of complex systems - as an algorithmic composer (and confronting a form of complexity I could never contain) - to discovering the complexity of the bioresonant algorithmic computer I was already in (life), and marrying the two (and in so doing, ceasing the attempt to contain the complexity) - and becoming a composer who engages process explicitly, rather than a composer who uses process implicitly to his own ends. Now I engage all means; all are contextualized through bodily engagement, and the processual understandings herein, and complexity no longer needs to be contained or controlled (from which alignment it can never be integrated); instead it has been entered (from which alignment its integration is implicit). You could say I have abandoned algorithms for the becoming of the self-organizing algorithm implicit; and, at times this still produces explicate algorithms.

I propose that we re-define the avante-garde – as simply to be on the leading edge of musicking in ones’ embodied process. Thus canonical actors who do this in their oeuvre, aboriginal actors who sustain this in this oeuvre, as well as experimental actors who employ this in their oeuvre²⁶⁷ all comprise the avante-garde.

²⁶⁷ And *not* experimental actors who gratuitously mime this. As mentioned before, it is entirely an inside job.

The leading edge of musicking is always to make of one's self an instrument of the bioresonance as it is, rather than to become co-opted by veiled *a priori* assumptions masquerading as bioresonance - the mimetic. The leading edge of our process is the intersection between the synechthodiosic infinitude of life processes, and that mirrored within us – and it occurs intrinsically when nothing gets in the way.

Thus the embodied inquiry into the exogenation of the *a priori* and the *a posteriori*, not as concepts, but as generative activities that unfold in the continuum/flux, is one which never ends.

One never lands, one never rests in this inquiry, like nature herself - for it is vigilance and sincerity therein that marks the one shared quality of all true great artists and thinkers. It is a living inquiry.

And we remember that inquiry is explicate (as in the conscious processes we've engaged in here) and implicit (as in occurring already, and exposed in all of our musical processes since the dawn of history). Thus, finally, we arrive at a definition of listening that is sustainable because it is located in the interactivity of this biangulatory inquiry:

Listening = bioresonant attention

This implicate inquiratorial methodology builds a bridge between the explicate and the implicate; emergent streams over the last 100 + years have built a bridge

between the implicate and the explicate²⁶⁸. If I have a cognitive theory, it begins with:

statistical enactivism as the level of explicate process²⁶⁹

implicate enactivism at the level of implicate process; of what is, the 'real', the continuum/flux, etc²⁷⁰.

The strength of this 'simple' analytical model is that all processes may be contextualized in it. It also provides a contextual frame for our biangulatory inquiry - the empirical via the implicate, and the intellection via the explicate. As mentioned before, this is biomimetic to the stereo image of the ears in cognition.

And then we can go on to explore interactivities - how the explicate emerges from the implicate, and how the implicate emerges from the explicate. Similar to

²⁶⁸ Each points to implicit interactivity.

²⁶⁹ This is a Bayesian nod. Statistical enactivism is a good metaphor for what is occurring in the interactivity of the neurobiology, as well as in the social complicities of our interactivity in the built, shared perceptual universe, especially as it models the constraints we have artificially placed upon ourselves therein. As has been pointed out (Degenaar & O'Regan), there is no Bayesian analysis going on in the neurobiology per se - as long as this is understood, the usefulness of the metaphor to explicate processes of the neurobiology is retained (as long as it is extended into interactivity, and not left in the realm of atomization as an end in and of itself). Degenaar et al. (ibid.) have also pointed out that pitch cognition theories contain a similar reduction of activity; both analysis are consistent with those herein in regards to hyperabstraction, the MNS and canonical activity, as well as the overarching analysis of atomization and interactivity in general.

²⁷⁰ This analytical model will be resolved in the following chapter on the basis of a processual analysis which transcends the limitations of the explicate/implicate frame.

Abraham's historiographical analysis of the emergence of primitives in culture (Abraham), we see the emergence of various evolutions of the underlying generative activity of mankind occurring over the span of deep time, and we can contextualize our art therein, as well as in the more superficial contexts of culture, etc. that it is usually contextualized within. Over the last 100 + years we have seen the emergence of the explication of the implicate - through the avante-garde, through Deep Listening, through fluxus and Dada, through John Cage, through the emergence of Eastern wisdom, through the emergence of meditative and contemplative modalities - in other words, the re-discovery of the implicit has inspired process which consciously cultivates, exogenates, and reveals it. This implicitly returns us to our generative source, and to an inquiry which eschews syntactical division - and demands a processual engagement at peace with allowing things to be as they are. In short - the emergent understanding is that all interactivity is apperceived through bioresonance, thus all implicate processes (musicking, intelligence, etc.) are bioresonant, and this demands a complete reorientation as human beings²⁷¹.

²⁷¹ The generative listening exercise presented at the beginning of this chapter is listening with the metaphorical attitude encouraged throughout implicitly present as one listens (wherein it is implicit that what is being attended to is a metaphor for coherencing, and that unfoldment is actually what is being observed, not our superficial reifications of such). It employs the multi-dimensionality of consciousness methodologically: it can be seen to facilitate this reorientation, for when we become conscious of the generative activity we are iterating (rather than unconsciously re-iterating it), we have finally taken our destiny by the forelocks,

To complete the concourse of metaphorical languaging used throughout this paper: from a dynamical systems perspective, you have coherencies as explicate frames (qualities), and you have implicate coherencing (natural) as embodied by the intrinsic activity of the brain, nature in her manner of operation, etc. When this synchrony becomes heightened at deeper and deeper levels, you have what the human organism labels as: mystical experiences, deep musical experiences, etc. You then have the human metaphors of love, compassion, etc. which in the psychological domain become bastardized into reductions primarily associated with romance, the erotic, etc. These actually point to the possibility of maximal coherence in the human organism, just as religious experiences do²⁷². IN other words, the signifier becomes stigmatized and the signified is thrown out, where the signified is the fruit of all of our endeavors; this should be seen to have been a consistent and pointed theme in this text.

If I try and find the place where vibration ends, and consciousness begins, or vice versa, I cannot. Where ‘my field’ ends, and ‘the field’ begins, I cannot. Thus in the dynamical system, there are no absolutes as traditionally defined - only coherency absolutes - wherein coherency has increased to such a heightened state that it creates a veritable absolute in the domain of vibrational process, or a synchrony spike. And

and can be said to be the instrument of our art, rather than our art the instrument of us (in terms of conscious observer [n]).

²⁷² Further corroborated by studies which associate heightened brain coherency with these emotions.

the lesser pursuit is the synchrony spike of one organism; the greater pursuit is the synchrony spike of the entire field, discovered by the organism.

We can extend the metaphor of ACM's into ACF's - apperceptive coherencing fields, as a phenomenon that the intrinsic enactment apperception mirrors, but does not contain the whole of. These represent the noumenal (and also very 'real') vibrational field which the artist explores (through their embodied process) in discovering the coherencing patterns exogenated in their art. They will, as stressed throughout, discover and realize those that reflect the mode of coherencing unique to them, whether closer on the spectrum to mimetic or bioresonant - and to the degree to which they have discovered the coherencing potentials inside of their own dynamical instrument, their bioresonant laboratory of direct experience, and can thus apperceive the self-similarity - the bioresonant similitude of processual unfoldment in the domain of vibration. Thus coherency absolutes would represent synchrony spikes in the implicate that the artist, at their greatest listening potential, can discover in 'their own' dynamical system - limited (explicate) synchrony has been transformed into infinite (implicate) synchrony, and the artist has become its instrument, arguably the greatest privilege available.

From a systems analysis, the human organism at the potentiated level of coherency represented by this can be denoted by love, compassion, etc. as signifiers of an activity marked by heightened symbiosis that can be shown to be exhibited in the brains of seasoned practitioners of compassion meditation (Davidson and Lutz). We are talking about the generative activity that, no matter what name is ascribed to it, is

marked by amplified coherencing. If the vibrational ethics alluded to throughout has any conclusion, it is in the realm of activity, not nouns. And 'love', 'compassion', etc. point to an activity that is significant in systems, where self-organization has become not just intrinsic, but explicitly facilitated, to the degree that the self-organization of all systems becomes 'my' self-organization. It does not exist in the realm of intellection, but unfoldment: the maximal potential of the dynamical system, the synchrony spikes of the implicate as it expresses through the human dynamical system, its conclusion, its final resting place processually.

Thus, identity, the self, the artist, the generative activity underlying - all collide and dissolve in a unity, like the modern post-colonialist collision we are currently experiencing globally. The tendency would be to try and create linear causation, but in fact, in the realm of enfolded/unfolded orders, holographic synchronies exist, not linear causations. There is no 'other place' where consciousness is sourced - consciousness is the synchrony, and thus not separate from it.

Thus, to the degree that love/compassion/etc. represent heightened coherencing in the organism/system, and facilitation of the maximal vibrational coherencing is the objective of musicking, and the 'self' as a nouning is replaced by activity - 'selfing' - the unfolding activity, rather than the limited conscious observer - and one cannot empirically find the place where vibration ends, and consciousness begins (that is not veiled *a priori* assumption) - to this degree, 'love' can very really and truly be

said to be who and what we are²⁷³, as well. Because it is the coherencing potential that is the inevitable conclusion of all of our processual meanderings; it is the coherency absolute of coherency absolutes²⁷⁴, enfolded within the field. Because identity (n) has been replaced by identity (a) inseparable from self-organization amplified (wherein self='the field') becomes the only logical 'conclusion' upon which to land. 'Love' is a much better metaphor for this activity, which is the actual praxis of our unfoldment as human beings (and as music-makers), than those we generally employ in the current dominant paradigm (like 'Benny', or 'Joe', etc.).

Musicking is one of many vehicles for the fostering and communication of this level of honesty; the actual coherencing of the system. It is the privilege of the artist to discover new coherencing patterns: vibratory unfoldment's that in turn produce maximal coherency in the organism²⁷⁵, and 'the field'. In discovering this inside of themselves, they are able to create music that speaks to it in 'others'. Thus, the leading edge of musicking, and the inward journey, are like an ocean, and the ocean

²⁷³ This is from an implicit perspective, rather than an explicit, and represents the culmination of radical honesty in this text.

²⁷⁴ Once again, absolute in the vibrational domain as a node of amplified synchrony, as opposed to the fiction of reified absolutes.

²⁷⁵ For those with explicately aligned ACM's, this will be a certain attractor of pleasure or beauty recursively returned to in the organism; for those with implicately aligned ACM's, pleasure and beauty will be assigned to an unfolding concourse of ever deepening coherencies, intimately linked to similar in 'the field', that musicking serves to facilitate in their system.

floor, respectively. As one expands, so does the other: from expansive, into expanse not imagined prior.

That Deep Listening, pedagogical listening, and embodied inquiries serve this direction in this historical moment is implicit and self-evident to the sincere inquirer; it is time that the elephant in the room be ‘outed’ - and further - listened to. It is time that we cease throwing out the baby with the bathwater; with the passing of the late, great Pauline Oliveros, whose embodied process was inestimably true to the name of her organization, this historical moment represents a clarion call to each to unveil the ways in which we have inhibited, stigmatized, or suppressed these directions (due to cultural constraints, judgment, the obdurate tyranny of the morphoteleological impulse, and the self-same attractor in the dynamical system), and leave those entanglements behind, in the historical compost where they belong. The living activity of musicking hangs in the balance: an activity intrinsic and self-organizing, which can only be held back by the explicate delusions of control that would restrain nature in her manner of operation, in favor of ‘them’ in ‘theirs’, in favor of psychology in its²⁷⁶. It is only a matter of knowing who, and what, we truly are - the generative activity underlying – and what was inordinately complex (like a CDS), all of a sudden becomes gratifyingly simple.

²⁷⁶ Psychology, quite simply, should be a tool, and not something which makes of us a tool.

Second Attentional Exercise

1) (2-3 minutes) Practice allowing sound to be as it is, as exercised throughout.

2) (5-10) Practice gestural listening. Put on a piece of music to listen to; simultaneously listen to the unfolding processes of vibration which constitute the musicking activity, and the unfolding activity of coherencing internally. Allow these to be one complete whole, one gesture.

If the mind becomes distracted, simply allow the distraction to be and gently bring awareness back to gestural listening.

Translation/Reverse Translation

We've talked much less about the musical object - the unfolding geometries of sound in an acoustical space as they propagate in any given moment - as some people would have liked me to have²⁷⁷. I did this very consciously. This 'musical object' is a dynamical unfoldment in realization, too often analyzed in isolation – as a 'frame' of this unfolding process, rather than as the wholity of it; as a theoretically closed system, an atomization of the implicate order, or the continuum/flux, all phenomena which I have exhaustively critiqued²⁷⁸. Approaching it as an 'object'²⁷⁹ too often

²⁷⁷ At least, we avoided talking about it from the particular 'frame' of the musical object more conspicuously.

²⁷⁸ In terms of our historical ways of approaching (or not approaching) them, and the implications for our ontological unfoldment, these continue to be highly significant, especially due to the degree to which they persist beneath the surface in dialectical processes. Even though we know that the musical object is a dynamical unfoldment, our discourse still reveals hidden *a priori* processes which locate it in the landscape of the atomized object, if we examine these conversations honestly; this aptly illustrates how atomization will occur beneath the exterior appearances of intellectual dialogue: just as tonality and equal temperament persisted in the substrate of music even after we believed we had 'moved on' from them. It further aptly illustrates the necessity of a processual engagement which disentangles from these hidden *a priori* processes.

²⁷⁹ At the same time, if it is understood to be the dynamical activity which 'musical object' as a lexical atom points to, then there is no problem. This is analogous to the interchangeability of music/musicking and experience/experiencing established earlier in this text, and the encouragement that a dialogic space become normative which fully inculcates the metaphorical nature of languaging at this deeper level of process.

reiterates this atomization, and as I seek to participate in a historical reversal of that activity, that would have been counter-productive as an approach.

The musical object's infinite inter-penetration with the dynamical systems which is in interactivity with and embedded within cannot be ignored - it is immanent – and further, cannot be excluded from any analysis of musicking (a) which presumes to be precise. We have patiently created frames²⁸⁰ for discussing music in this light for this very reason, and we will now proceed more specifically into the domains of process and theory, using what has been established as tools for entering these domains more competently.

The musical object as a resultant is an emergent phenomenon: an emergent co-arising which is a processual expansion of the complexity of not-two into not-many; in the same way that the 'joining'²⁸¹ of two human beings as dynamical systems (for example, teacher and student) is simultaneously the emergence of an enfolded order of complexity through the appearance of two phenomena as human

²⁸⁰ The contrast between atomized and dynamical frames intellectually, contiguous with the same in cognition, music, etc., should clarify where this is a limiting interposition upon discourse, and where it is a tool to be used creatively. Dynamical frames are simply that: tools. This contrast should also elucidate the nature of competent intellectual discourse: wherein what unfolds within it is oriented to the dynamical, metaphorical nature of the frames it constructs, including dialectical frames.

²⁸¹ The term 'joining' harkens back to the story I shared in regards to meeting Pauline; that experience can be seen as a generative seed for locating this conversation about process, wherein disparate phenomena may be observed to share a similar unfoldment.

beings, the ‘joining’ of the dynamical systems at play in any act of musicking is similarly and simultaneously the emergence of an enfolded order of complexity through the appearance of those phenomena which arise upon the stage of the conscious observers’ perception in their observation of these.

These dynamical systems inevitably include human consciousness, the body, and an acoustical space, and may also include instruments, computer systems, and other extensions of the body as part of this dynamical interactivity. In addition, human consciousness and the body imply other, more subtle dimensions of dynamical interactivity: history, musical theory, culture, notions of the body, microsounds, attentional processes, and infinite other processes which arise within, and interpenetrate with the body and consciousness, and thus inevitably come into play.

Thus there is a multi-dimensional simultaneity which is implicit in any analysis of process, and which is further an isomorphic mirror of the processes of consciousness, neurobiology, and nature. Take a simple example, comprised of multiple musical dynamical systems in interactivity – say a violin, a viola, an oboe, three performers to play these, and an acoustical space (to create a very simplistic example). The musical object may simultaneously be analyzed as emerging from the dynamical system which is the sum of these seven ‘individual’ systems, as well as the infinitude of dynamical systems which unfold within them and through them (neurobiology, history, the microsounds of the body, quantum processes, musical theory, etc. as outlined above), as well as all of these joining and representing one emergent phenomenon resultant of an enfolded order of organization (as in one of

many enfolded orders); as well as simultaneously all of these joining and forming one emergent phenomenon resultant of the implicate whole (as in one)²⁸².

This dynamical unfoldment is the history of all musicking. As the enactivists have argued, it occurs in the praxis of bodily engagement. This bodily engagement comprises a built perceptual universe, a stage upon which exogenates our subtle processes of consciousness – our hidden *a priori* assumptions and processes, as I have referred to them here. These appear ‘real’ enough to defy inquiry, and this is part and parcel of the implicit challenge in the embodied process; the quixotic and chimerical quality intrinsic to the nature of our built perceptual universe demands sincere inquirers who are dedicated enough to break through these more superficial layers wherein the *a priori* masquerades as the *a posteriori*, and which will thus obfuscate the inquiry, and arrest it before it has unfolded. This requires patience. If I had begun this text by talking about the musical object first, and then proceeded from there to speak about every other topic exclusively in relation to that, this is what would have occurred at the more subtle levels of consciousness, as we have analyzed them herein: Immediately every association, every ontological structure, every memory, every belief, every runnel and chreode, etc. in regards to music would be called upon in consciousness. The neurobiology would kick in, hyperabstracting from these a frame

²⁸² This is part and parcel as to why Small suggested the term musicking (a), as more accurate than music (n) - as it reflects processual unfoldment not object – I further point out that it is implicate, as well as immanent, phenomenologically, and would like to reinforce the wisdom of its dialectical inculcation.

(still subliminal to conscious purview) to inhabit in the upcoming unfoldment, a theatre in which to frame it, as well as by which to extrapolate: what to expect, where the conversation would go, where it would not go or could not go, what would be appropriate discourse, what would not, conversations which had already occurred historically which had already answered that particular question, and thus had brought it to conclusion, and which thus further nullified the necessity of new processual unfoldment and inquiry, feminine endings, etc. In other words, it would have pre-framed the experience intrinsically – and this is not a benign process, as we have outlined throughout this text. Integral to my arguments herein is that this pre-framing shapes the resultants more than we have been willing to confront historically – and that this has prevented us from entering into a domain of musical, processual, and ontological complexity which points to a fundamental state transition shift in the larger dynamical system, one which reveals synchrony absolutes of a completely different nature, and which further outlines the direction of our musical future.

The intentionality of this processual approach has not been to ‘break with the past’, ‘push against’ it, or sidestep engaging historical conversations – but rather to be a phenomenological, processual, and musical inquiry into the geometries of unfoldment prior to human mediation, and thus decidedly required new means as a result; means whose necessity would in turn be illustrated through this processual unfoldment, and thus which required a little faith on the reader’s part. Once this unfoldment had effected a field of enactment within the neurobiology of the reader comprehensive enough to reveal the geometries of the implicate it pointed towards

(just as outlining ‘water’ on Helen Keller’s hand opened up the universe of communication), so that these geometries became ‘concrete’²⁸³, rather than abstract, it then became possible to proceed from there with a coherent cognitive signal chain established antecedent to the atomized intellection of lexical unfoldment’s, their intrinsic morphoteological arresting of process, and the ‘masculine ending’ in the realm of inquiry.

Not only do I argue that no rigorous intellectual inquiry is possible without confronting this intrinsic process of pre-framing at the subtle levels of consciousness, but no true musical inquiry, either, as this process is itself at the center of all musicking. The specific content of this text has made it impossible for me to approach the subject in any other fashion; I say this not in defense of my processual choices, but rather as the elucidation of their logic, as fulfillment of the injunction that process and content collaborate towards heightened synchrony. I chose very carefully what to programmatically explain up front, and what to withhold, in order to shape the signal chain at the level of consciousness in a fashion consistent with the implicate methodology, and all of the discussions herein. In the end, this inquiry is entirely an ‘inside job’, but it has been my task to create the most *facile* container for the unfoldment as possible, the most *facile* invitation for the consciousness of the

²⁸³ In the sense of being apperceived directly as a phenomenon, rather than abstracted through layers of interpolation.

reader – just as, in Sound, Listening, and Consciousness, I sought to create to the most *facile* container and invitation for the same to occur inside of my students.

The activity of this subtle front-loading – atomization - which occurs instantaneously and apperceptively (as a resultant of apperceptive coherence matrices which co-opt the intrinsic enactment apperception in a morphoteleological modus of mimetic recursion which it has been conditioned to [primarily by culture]), then limits or filters the resultant experience potentials which may ensue. The emergent directions which I have been tracking in music (as well as across other disciplines), as well as the implicate methodology (which includes the attentional inquiries herein), are all approaches which facilitate a truly ‘fresh’ inquiry – a truly ‘living’ inquiry - for the same reasons that I have approached the text in the fashion that I have. I argue that the implications of this are too profound to ignore, and that this phenomenon is itself at the center of everything musical, as well as the praxis of direct experience/our mediations thereof as the center of human unfoldment as a general case²⁸⁴.

²⁸⁴ This is part and parcel of how our cognition works - it uses a relational field of similitudes/differences in prior content to orient itself. Just as atonality may exogenate elements of tonality without acknowledging the implicit presence of tonality in its outward expression, so could this text have unfolded in the implicit presence of this subtle and implicit contextualization, or front-loading, at the level of atomization - which extends as an overlay over the entire apperceptive process - with no acknowledgment of how it would have unfolded otherwise. Thus I did the best I could to give the reader every opportunity to have a different experience - a mutagenic and bioresonant one, rather than a mimetic and teleomorphic one – in the

My argument is that the artist discovers, through their embodied process, a new coherencing potential. Translation is the process by which the artist takes this coherency apperception, which they have discovered in their embodied process, and exogenates it outward as a piece of realized art. This involves all of the competencies the artist has cultivated in various arenas to facilitate said translation.

Reverse translation is the process by which a listener then translates their experience of the art back into an apperception of the original coherency potentials discovered by the artist²⁸⁵. In this, there is a sort of inherent existential joining which elucidates some of the deepest territories of our inquiry: the bridge between the explicate and the implicate.

The process may be equated with the operation of several technological systems in order to extend the analogy and connect it to vibratory unfoldment, as well as the notion of self-equilibrating natural intelligence, and self-organizing systems. Beginning with an audio system as our first metaphor, an acoustical signal is encoded into an electrical signal by a microphone, which is then decoded into an audio signal by a speaker. There is a process of translation by the microphone, and one of reverse translation by the speaker.

domain of intellection, and to facilitate a conversation which did not regress into explicate cul-de-sacs.

²⁸⁵ Or some variation thereof, as we will discuss in a little bit.

Proceeding to the digital domain, a body of information, say text, is encoded into digital form, which is further encoded into electrical form; this is then decoded from electrical form, to digital form, to text again. Thus the iterative process becomes two layers deep.

In the radio domain, a DJ's voice is translated into electrical information via a microphone, which is then translated into digital information, which is reverse-translated into electrical information for further translation into RF transmission; on the other end (of the receiver) the RF transmission is reverse translated into electrical information, which is then reverse-translated into acoustical information. We thus have an iterative process 3 layers deep on the outbound flight, and 2 layers deep on the inbound flight, so to speak.

Taking the first example (of simple audio translation); if there did not exist an isomorphic similitude between acoustic and electrical activity, this activity would be either impossible, or extremely difficult, requiring complex algorithmic interpolation which would probably be prone to error (as such translation in a stream of information of such complexity would inevitably produce difficulties).

Fortunately, this isomorphic relationship exists across the domain of infinite systems; the electrical activity is not of a completely different generative activity than the acoustical activity: both are unfolding vibratory information, like music, exhibiting cyclicity and amplitude. Thus the translation from acoustical to electrical domain and back is relatively simple.

We tend to take for granted the degree to which this isomorphic vibratory activity in nature replicates itself in self-similar fashion across multiple domains, facilitating communication which would otherwise be impossible. Examination of all domains of technology will unveil the staggering degree to which this is true.

Thus, one could say that there is a sort of ‘electro-acoustic cognition’ which occurs in the simple audio signal example, and to further observe that human cognition and other processes described in various domains in this text are not dissimilar. In other words, intelligence is not a different activity which inhabits a separate domain from the rest of nature and her unfoldment; it is isomorphically aligned with vibratory activity, just as RF signals, acoustical signals, electrical signals, and digital signals are²⁸⁶.

Further, with DNA, we once again have an analogue to the above described process. We may describe this as a sort of biological cognition which replicates itself in innumerable species; as alluded to above, there is a sort of electrical cognition, digital cognition, RF cognition, etc. In each case, it is not the byproduct of a mysterious activity different in operation from what is being cognized. Rather it is the

²⁸⁶ Similarly, radio signals are vibratory signals, translated into electrical signals, translated to vibratory signals in the RF domain, reverse translated into electrical signals by a receiver, and then reverse translated into acoustic signals by a speaker.

isomorphisms in activity between the cognitive activity and the information being cognized which makes communication, and intelligence, possible in the first place.

One may counter the above with the argument that, for example, digital information (consisting at its simplest level of 0's and 1's) is not of the nature of said vibratory nature; that it is predicated upon atomizations. However, one will note that in every case, non-vibratory information (text and digital information in our examples above) has to be translated into vibratory information before being disseminated across systems (in this case, electrical signals, which consist of cyclicity and amplitude) and then reverse translated back into the commonly understood syntactical idiosyncrasies of the original language (digital in this case).

Thus it may retain idiosyncratic languaging properties within its own oeuvre, but this must be translated into the vibratory domain if it is to be disseminated across systems. This understanding can be expanded into linguistics, music, cultural idiosyncratic elements, political discourse, intellectual discourse, biology, psychology, and every other domain with regards to the fashion in which it is disseminated. With spoken language, for example, the syntactical morphologies of the language may not resemble vibratory processes; however, they rely upon vibratory processes to be communicated. Similarly, with tonality, or any other defined musical syntactical structure. Thus vibratory information, and the universal syntax of

cyclicality and amplitude²⁸⁷, are understood to be the implicit languaging of all life processes: coherencing.

My argument goes on to contend that these idiosyncratic forms of syntactical expression, which may extend beyond language to patterns of action (such as instrumental skill) may further be visualized as competencies. They thus have an intimate relationship with Myrna Estep's notion of knowing how (Estep).

These competencies are our tools for the realization or exogenation of coherencing potentials, as well as of cognizing them; they are both the instrument of translation and reverse-translation, in concert with the coherency apperception, which discovers the activity of coherencing they point to²⁸⁸. They are thus part of one conversation, that of coherencing, which has occurred since the beginning of time: it is the activity of all systems: in nature synechtdiadosic, synonymous with coherencing, and in turn synonymous with musicking from the implicate perspective, wherein all diversities inevitably become not-two and not-many in the state transition shifts intrinsic to the implicate. From the purview of the conscious observer musicking seems to start and stop, as: movements, pieces, moments, slices, as a

²⁸⁷ Which electrical cognition has been illustrated to be predicated upon.

²⁸⁸ This 'pointing to' is ostensibly a metaphorical relationship; one of signifier and signified wherein the signified is always the activity of coherencing.

creative process (separate from the creative process): exometaphrasi²⁸⁹ and exodiadosis²⁹⁰ of various degrees. In fact, all is the activity of synechtodiadosis: unbroken dissemination of the coherencing activity. Our only 'choice' as artists is how we interact with this unfolding process of coherencing in a fashion which exogenates musical resultants²⁹¹. The emergence of the artist-as-facilitator model (Fox) being historically aligned with the exposure of the illusion of genius, the expert mentality, and the conscious observer (n), is no accident. It is a further exogenation of the emergent phenomena tracked throughout this text. Thus 'human creativity' as a separate activity from that of life is a myth perpetuated by the self-same attractor at the center of the dynamical system, and is not intrinsic to life itself²⁹². It is thus also historically outmoded.

And the above applies just as readily to 'human intelligence', as it does to 'human creativity'. The human-centric notion that 'our' intelligence is unique and

²⁸⁹ External translation.

²⁹⁰ External dissemination.

²⁹¹ And even this 'choice', as has been illustrated throughout, is resultant of infinite inter-penetrating phenomena, and not an atomized actor on a similarly atomized and illusory stage.

²⁹² I originally visualized endo-/exo- genesis and synechtogenesis as the metaphorical frame by which to have this discussion, until I realized it was too difficult to overcome the burdensome weight of our assumptions of genesis as unfolding from an atomized actor, heavily influenced by our Judeo-Christian past historically in the West.

isolated from the other activities of life is another arbitrary psychological filter: like those producing the atomized conscious observer, the unconscious (n), the ‘other’, and all of the other domains wherein we exclude one activity from the unfolding activity of all of life, and then ascribe thingness to, towards the end of perpetuating the particulars of an atomized perceptual universe. Of remaking the world in our image: it is a myth, and an endemically morphoteleological one. We are metaphorically waiting for Godot, in looking for evidence of an atomized human intelligence which reaffirms our dominance over, and separation from, nature. Rather, it is in discovering our synchrony with nature that we discover our true intelligence, across all domains: we are, literally, nature in her manner of operation. We can imitate it, or we can eliminate the processual interposition of imitation and embody it, and then proceed to explore musical process from there, as so many important historical actors in musicking have in the recent past.

It should be apparent that, from the perspective of the conscious observer, one must develop new metaphors for intelligence to enter into dialogue with this domain competently, and not regress into cul-de-sacs wherein atomized assumptions of the conscious observer as autonomous creep in again as a hidden *a priori* process²⁹³. And

²⁹³ Just as equal temperament persisted as a subliminal element of the process while elements of the tradition proudly proclaimed that they had ‘moved on’ from their musical past. The goal is not to eliminate equal temperament or any other musical element, but to reorient our level of self-disclosure so that our musicking activities

thus musicking, as an art of unfolding process and vibratory communication, is an apt forum for exploration of these subjects.

In terms of coherencing, when talking about this vibratory information, what it transmits is the actual activity of coherencing, the unfolding geometries of the activity of dynamical systems emerging from within larger dynamical systems as new orders of coherency previously enfolded (ostensibly hidden) in the field. As has been reiterated throughout, if this is formulated as an atomized reduction of said activity, its value dissipates; however, when the activity of music is understood to be signifier for coherencing, and focused in terms of verbing, we unveil rich new avenues of inquiry. Coherencing is to musicking as electricity is to wire: music is thus a veritable carrier wave for the coherencing activity of the universe, its self-organizing nature.

If we extend the above analysis' of technological systems to music, we have a fairly *facile* frame for analyzing the multi-dimensional level of process outlined at the beginning of this chapter; one which is worthy of being repeated in other analytical situations.

reflect a heightened degree of sophistication in terms of their awareness of the actual generative seeds of their own activity, and the actual praxis of unfoldment.

Similarly, the goal is not to get rid of the conscious observer, but rather to recontextualize it within the actual praxis of unfoldment, so that conscious observer (n) becomes conscious observer (a), and the mimetic recursion of the atomized landscape is broken.

Let's begin with a simple musical scenario, wherein two human beings are sitting upon a hillside in natural environs. One of the humans spontaneously begins to sing; the second listens as the first continues to sing. We may say that the coherencing activity of the universe is being translated into song via the coherency apperception of the singer, and that the listener is then reverse translating that from its acoustical geometries back into this coherencing activity, via the same faculty. Thus we have a processual analysis which is one-layer deep.

For our second example, let's take a traditional piece of music, say Chopin's Nocturne in E-flat major, Op. 9, No. 2²⁹⁴. The composer has produced a score, which is given to a piano player, who performs it in a concert hall for an audience²⁹⁵. We may say that Chopin has translated the activity of coherencing via his coherency apperception in the form of a score. The performer has then reverse-translated this via a rehearsative process (in concert with his/her coherency apperception - and discovered a/the coherencing activity for themselves internally), and then further translated the score into a musical object via their performative practice (and coherency apperception in concert with this) during performance. The listener has

²⁹⁴ This example is illustrated visually in Fig. 5.

²⁹⁵ The historical element of this example brings in the question of whether or not different editions of a score constitute a new chain in this process; they certainly do if includes any element of arrangement, interpretation, or reformatting of the score (which they invariably do), and I believe this has historical significance in terms of the conduction of musicking through historical process, and how this exogenates as published editions of various works.

then reverse translated this musical object (via their coherency apperception) and discovered a/the coherencing activity for themselves internally. Thus the process is two-layers deep on the outbound flight (composition and performance), and one-layer deep on the inbound flight (listening).

For our third example, let's take an interactive sound installation. A composer creates software which facilitates a dynamical ecology in a gallery space, wherein participants move about the space, listening to a resultant which is modulated by their movements as recorded by a series of motion sensors. The composer has translated a coherencing geometry via the medium of software and hardware implementation (which comprise one whole dynamical system) which is then reverse translated by the participant via their coherency apperception. We can thus simplistically say that this process is one-layer deep; we will soon see that the truth is much deeper in its complexity.

In the first example, the medium of translation included the singer's body, voice, and the acoustical space. In the second, the medium of translation included Chopin's body, engagement during the compositional process, the performer's body, the performer's instrumental engagement during both rehearsal and performance, as well as the acoustical space. In the third example, the medium of translation included software, hardware, an acoustical space, as well as the composer's body.

In each instance, we can simultaneously talk about the medium of translation as being the dynamical whole which is comprised of these individual elements as dynamical systems within it. With the interactive art installation, we come nearer to

exogenating a musical context which reflects this, and this is integral to the argument that this state transition shift (wherein our musical expressions reflect this in process more nearly) is intrinsic to emergent streams; however, it is present, self-evident, and observable in every case of musicking ever created, implicitly.

Simultaneously, this analysis has been extremely simplistic, leaving out an infinitude of dynamical systems which come into play as unfoldments within and through those already mentioned. In our first example, as the singer sings: prior experiences with music and sound, ideas inculcated from culture about music and sound, her neurobiology's interactivity with the acoustic ecology, etc. all join in the emergence of the phenomenon of singing. In the second example, Chopin had been exposed to musical history and theory (from the Western lens) up to that moment, has an identity in terms of being a composer, has an idiosyncratic sensori-motor engagement which integrally influences the process, etc. In the third example, the composer probably has notions of technology, unique ways of engagement with technology, notions of the participant, a relationship to the acoustical space, etc. which also join in the process. In each, a feedback loop at the level of consciousness and its' engagement with the process is integral, and inseparable from feedback loops at the level of bodily engagement²⁹⁶. Thus, this simple analytical frame may be

²⁹⁶ Once again, as mentioned by Cariani (Cariani 2001, 2003).

expanded and contracted infinitely in order to *facile*' navigate various processual perspectives *ad infinitum*²⁹⁷.

Simultaneously, in every instance we can also say that out of the activity of the implicate order, musicking emerged through the appearance of these disparate phenomena as human beings, instruments, etc. on a built perceptual stage wherein they made 'choices', etc.

This analysis unveils the critical understanding that musicking is signifier for the activity of coherencing in every case: it is a dynamical metaphor which points back to that activity, and not to the vanity of our psychologized notions of such. As we inquire into this dynamical unfoldment further, we also come to the understanding that music is not composer organized, but rather self-organizing (like the rest of the universe), and that the composer composes not with notes and chords, but via the medium of self-organization itself. What appears as notes, chords, instruments, software, hardware, etc. are the superficial mediums of engagement: it's as if self-

²⁹⁷ For example, one will note in the second example that there is an instance of reverse translation (by the instrumentalist) embedded within the larger activity of translating the coherency apperception discovered by Chopin into the musical object reverse-translated by the listener. This particular instance may be seen to be integral to the process of interpretation by the performer; upon deeper inquiry, one will find that infinite layers of translation/reverse translation exist within every element of process – in inter-nested fractal isomorphisms - a level of complexity which can only be resolved by the vibratory isomorphism theory which will be presented in the next chapter.

organization is the clay, and the composer were a sculptor in that medium, and these various tools represent the natural diversity of coloration and textural differential in the clay. Thus we must approach the challenge of constructing coherent frames from which to address this multi-dimensionality (as we are here) as an investment in the future of musicking.²⁹⁸

As a final musical example, let's examine a Deep Listening piece. Participants are instructed to listen deeply to the silence of the space, as if it were vibratory activity (which it is), and then express outwardly any sonic phenomena which arise naturally within their internal field of consciousness. Once again, at a simplistic level of analysis, the composer has translated a coherencing geometry (in the form of an entire dynamical system) which is then reverse translated by the participant.

In both the interactive art installation example, and this Deep Listening example, the system has progressed through a state transition shift wherein the listener is simultaneously performer and listener (in the interactive art installation, this will occur to the degree to which the participants' movements modulate the music²⁹⁹, and will also increase in natural complexity as the contextual framing of the piece includes consciousness and the body at the level of sophistication intrinsic to

²⁹⁸ And these further beg the inquiry into the self: into what the possibilities are for understanding that phenomenon outside of atomized reductions which constitute rote cultural habits in recursion, and those which locate it sanely within the multi-dimensionality fleshed out above.

²⁹⁹ As well as to the degree to which this modulation is mutagenic, and not mimetic.

the Deep Listening pieces, wherein they are more intimately aligned upon the praxis of bioresonant unfoldment, than they are mimetic unfoldment.). Thus elements of the feedback loop at the level of consciousness and the body which were implicit in the performer in the second example have now been absorbed into the listener and become explicit, and have further created a feedback loop between listener and performer as dynamical phenomena within the listener, which further exponentiates this state transition shift, and its idiosyncratic complexity and synchrony exogenation along the praxis of the implicate principle, the body, and consciousness.

Further, all of the subtler levels of consciousness (notions of music, prior experience with music, etc.) implicit in the performer come into play in this internal feedback loop, as well – ostensibly including both the translation/reverse translation activities of the performer outlined in example #2, as well as their coherency apperception, contained within the continuum of the listeners’ reverse translation and coherency apperception processes – and further exponentiating the degree of complexity of this/these feedback loops which influence/frame what the listener will create/experience simultaneously³⁰⁰. Thus, from our first example, to the last, we can

³⁰⁰ A few notes: 1) the multi-dimensional quality of process and consciousness is illustrated once again in a situation wherein the particular cases of ‘listener’ and ‘listener’s coherency apperception’ and ‘feedback loop in space’ also contain within them particular cases of ‘listener’ and ‘performer’ and ‘listener’s coherency apperception’ and ‘performer’s coherency apperception’, and ‘feedback loop within listener’s consciousness’ and ‘feedback loop within performer’s consciousness’, thus 1) listener, performer, coherency apperception, and feedback loop (as well as all other

see a trajectory wherein the activity of musicking becomes less and less abstracted (from the purview of the listener) in terms of explicate process, approaching a singularity of dynamical expression which may be seen to be further contiguous with the implicate activity in exogenation, and which further exponentiates natural complexity, as opposed to artifactual complexity³⁰¹.

The passive listener paradigm (wherein musicking is ‘done’ to the listener) has dissolved and is outmoded, as has the paradigm of musician as ‘expert’ and ‘authority’; as has the abstraction of explicate unfoldment as a generative underpinning and end in-and-of itself as critiqued throughout this text. The future of musicking is the further exponentiation of the natural coherency singularity alluded to above into the domain of higher and higher orders of organization. These higher and higher orders of organization become available (both on the local cognitive level, as well as on the global historio-musical level) in inverse relationship to the

processual atoms) simultaneously are one/many. The larger feedback loop which Cariani described contains within it all of the enfolded orders of ‘feedback loops’ described above – as well as infinitely more in progressively deeper layers of enfolded process. Once again, this situation of complexity may only be resolved via a vibratory isomorphism theory, which will be presented in the upcoming chapter.

³⁰¹ Further corroborating the suggestion that we must simply become honest about music, and see what unfolds from that. As we have progressively become more and more honest about musicking and its actual context(s) of unfoldment in this text, it has become self-evident that natural complexity (and the processes which most *facile* exogenate this) are more near to sound as it is, natural process, natural intelligence, as well as the embrace of the previous three in our historio-temporal unfoldment, than artifactual process (and the processes which exogenate it) can ever be. And that this is integral to the emergent streams emphasized.

disappearance of artifactual forms of complexity which obfuscate them at the level of consciousness and the body. The essence of this is to taste the flavor of the musicking: to be a *rasika*. To me this ‘flavoring’ is synonymous with this gesture at the level of consciousness, which both musician and listener discover, or taste, ‘together’ (via their coherency apperceptions), and which is thus the coherencing activity of the musicking discovered in the implicate instrument. Thus, when performer and listener become enfolded into the same activity, the form of complexity exogenation realized is further catalyzed into the domain of a completely different nature than that inhabited by the impulse towards increasing orders of explicated complexity as an end in-and-of itself, as was pursued by disparate musicks discussed in the chapter entitled The Splitting of the Atom.

In the musical examples above, there is an implicit question underlying which is highlighted in the illustration of the second example: to what degree is the coherencing activity discovered by the performer and listener isomorphic to that discovered by Chopin? Due to the evidence of brain synchronies in Buddhist monks and classical musicians being a significant stream of convergence between the two (Dobbs), we may postulate that some co-resonance between the biological organisms of the listener and performer may transmit directly, and that this heightened degree of synchrony (or coherencing) is integral to what the musicking transmits. And that critical to the social purpose of musicking is the dissemination of new geometries of heightened synchrony in the organism; whether in the brain, or any other element of the dynamical system (beyond but including the body).

It is most likely that these geometries are in fact transmitted via the processes of translation/reverse translation, along with an implicit organic co-resonance which occurs between the listener and musician³⁰², and that various musicks may be found to exist in a spectrum of exogenation between these two. In terms of the artist, this unveils an important window into the impact of our art. In navigating the landscape of the modern world personally, we discover through our sensori-motor engagement new ways of engaging the world coherently. Inevitably, we simultaneously discover particular cases of the coherencing activity which we find to be especially relevant or poignant; these may be seen as isomorphic to the ways of engagement discovered. In disseminating this particular case of coherencing to the listener, we are in some way also transmitting these ways of sensori-motor engagement at the same time. Thus the artist may be seen as facilitator of heightened engagement with the world – of ‘helping’ their audience to discover these within the geometries of their own unfolding embodied process of sensori-motor engagement.

In answer to the question posed above, I think it is reasonable to conclude from study of dynamical systems that the particular cases of coherencing discovered

³⁰² Not necessarily due to organic proximity (although this may be a factor), but primarily through the MNS, the intrinsic enactment facility, and other isomorphic systems of sympathetic co-resonance which I predict will be discovered more and more in biology in the near future, as researchers will be looking for processes isomorphic to the MNS, now that it is ‘in their consciousness’ that body processes may unfold along these generative lines.

via the coherency apperception of the listener and performer are most likely to be isomorphic to that discovered by Chopin in more cases than not; self-similar in nature, not self-same. If we could plot on a histogram³⁰³ all of the particular cases of coherencing discovered by performers and listeners of this piece over the temporal span since its composition, I predict that they would mostly fall fairly close to that which Chopin originally discovered, with a certain number diverging fairly broadly³⁰⁴. I would even predict that a Bell curve would be exhibited in this divergence.

Of course, as mentioned before, until we have neurological analysis instruments more *facile* in transmitting the particular geometries of unfolding patterns

³⁰³ Of course this would involve going back in time to the moment Chopin discovered the coherencing activity, taking neurobiological readings, and then travelling individually to the temporal moment when each performer and listener did the same, and taking neurobiological readings from them, as well. Also, as mentioned earlier, I believe our current neurobiological analysis tools are extremely germinal in terms of capturing the complex geometric unfoldment aspect of neural activity I would like to see in addressing the coherency apperception as a phenomenon.

³⁰⁴ One may imagine, for example, an instance where one goes to a concert hall, begins listening to a piece of music, and then somehow finds themselves (seemingly without knowing how they got there) on a completely divergent train of creative thought, and leaving the concert hall wondering if they had even heard the music at all. Using this as an example, we can analyze this ‘divergent train’ as theoretically being the discovery of a new particular case of coherencing. For the sake of argument, if this were true, the geometries of Chopin’s music in unfoldment may have somehow facilitated this process in the listener; thus, though they may not have transmitted the ‘same’ particular case of coherencing, they have certainly facilitated the larger phenomenon of coherencing at the level of the implicate order, and this is highly significant in terms of the activity of self-organization.

in the nervous system, such questions may only be inquired into empirically and theoretically, and at the more superficial level facilitated by current medical technology. However, there are a few approaches which we can imagine exploring now: we would first need to establish a correlation between the geometries of the neurobiology, and the coherency apperception, and then from there between disparate coherency apperceptions. This would initially involve studies which correlate participants' temporal reports of their experiential unfoldment listening to a piece of music (and then an inductive extrapolation of the relationship between these reports, and the activity of the coherency apperception), and neurological readings taken simultaneously with this listening activity. The correlations observed (or not observed) would then aid us in making initial stabs at addressing some of the questions explored empirically herein through more explicate processes.

We could achieve the above via fMRI, if it weren't for certain problems with the logistics of the scan process. Subjects in this instance would be asked to listen to a piece of music while lying in the scan chamber, strapped in. There are then two methodologies for obtaining reports of their experiences, which are both problematic. The first is to ask the subjects to report their experience verbally as they unfold, and to record this (using the microphone located inside the scan chamber). This is generally considered poor practice in fMRI implementation, as it will tend to influence the brain activity (due to the concomitant stimulation of verbal centers in the brain), as well as potentially cause the participant's head to move, both of which would be inhibitive to accurate results. The second method would be to ask

participants to report on their experience immediately after the scan. This could potentially be fruitful, but is still problematic for two reasons: first, it would be difficult to corroborate the precise moment temporally which specific elements of reported experience correlated to; as obtaining specific temporal correlations between the geometries of the brain and the unfoldment of reported experience would be critical, this would be a problem for the study. In addition, experience reported after the fact (even directly afterwards) becomes dissipative in its transmissional clarity. The requisite need to obtain specific and clear correlations between brain activity and experiential unfoldment would once again render this problematic. Any re-ordering of experiences temporally, etc. or subsequent re-interpretation of them as reported after-the-fact, would drastically inhibit the usefulness of the results.

In the meantime, the processes of coherency apperception are fortunately implicit in the implicate instrument: in the bioresonant laboratory of direct experience, and may be studied therein *ad infinitum*, without any investment in expensive laboratory equipment. And if the initial evidence from Buddhist monks and classical musicians is any indication, this represents yet another arena of life wherein we may intimately observe the isomorphic similitude across systems so endemic in a dynamical systems based inquiry, and further corroborate the critical implications of such.

It is possible to use the electrical analogy to further unpack these subjects. We may ask: to what degree will the coherencing activity be transmitted by music? We said before that coherencing is to musicking as electricity is to electrical wire. Thus

we may apply the properties of electrical wires metaphorically; analyzing the degree of conduction, resistance, etc. exhibited by a performer, listener, composer, performative process, compositional method, etc. (as the medium of conduction) as being the modulating factor in terms of the translation/reverse translation of a particular coherencing geometry discovered in the implicate domain. The goal of any musician, then, would be to become as *facile* a conductor of the coherencing activity as possible. Deep Listening, as well as pedagogical listening, facilitate the potentiation of this conduction, as we will see.

We may make a further analogy using the psychological filters, and the biological filters: wherein the biological filters would denote elements of the medium which functionally promote conduction (properties intrinsic to copper, aluminum, etc.), as illustrated in the human domain by the autism example discussed earlier on this text. The psychological filters (as I have framed them herein) would represent a source of resistance in the medium: in the domain of consciousness and its unfoldment – ostensibly, resistance to the continuum/flux, or coherencing. Clearly, as the degree of mediative debris in the filtrative mechanisms is decreased, the wire becomes more conductive; thus, unlike electrical wires, in the domain of consciousness, we may transform the ‘our’ medium (from aluminum to steel to copper, etc.). Consciousness is thus, as reiterated throughout, a multi-dimensional medium.

In assessing the ‘impact’ of our musicking beyond the arena of neural, organic, and dynamical system synchronies – for example in the socio-political

domain - many troubling issues come into play which are beyond the scope of our inquiry here. But it will be useful to unveil a metaphor in this domain briefly to promote discussion. So let us reorient our radio analogy for a moment and place it in this domain; afterwards we will shift it into the domain of the particulars of a stream of transmission/reception, before returning it to the signal domain it began in.

Let's imagine two radio stations operating within the borders of a dictatorial country: one is independent, and the other is government controlled. Let us further visualize what systemic coherence represents at this level of analysis: the dynamical system of the 'nation' includes natural systems, as well as human interposition upon these (in the form of roads, buildings, and other elements of 'civilization'); humans and other species obviously belong to the first category, natural systems. Thus coherency with regards to an explicate analysis would be in relation to the particulars of this 'frame'³⁰⁵.

The government controlled station, along with other activities, promotes government issued news reports, as well as paid advertising, which have been purchased either via money or power by special interest groups (which includes the government's 'special interests'); thus their exometaphrasi and exodiadosis may be

³⁰⁵ This is an explicate systems analysis; in the next chapter we will resolve the problems inherent in this by expanding it to include the general case of coherencing.

observed to exhibit intrinsically a lack of self-disclosure³⁰⁶, as well as a degree of outward deception corollary to it, in the interest of recursing these ‘special interests’ in the dynamical system – their self-sustenance through mimetic recursion.

The independent station, along with other activities, takes a particular interest in promoting community awareness, and specifically awareness of local initiatives which foster social cohesion in various domains, at both the local and national level. They offer transparent news reporting which covers many elements of current events excluded (or filtered) from the government issued reports. Their exometaphrasi and exodiadosis are thus of a different generative nature than that of the government-controlled station – the natural self-organization – the natural mutagenesis and bioresonance of the various elements of the system – are fostered by their activities, and by this form of dissemination.

We can continue to analyze the two radio stations from the perspective of generative activities; generative activities may be apperceived from within in terms of the internal purview and the embodied inquiry, and they may also be observed from without, intellectually and analytically, implicitly as well as inductively via the

³⁰⁶ There will be a spectrum intrinsic in terms of levels of self-disclosure. The assumption, however, is that there is inevitably a degree of abstraction between activities engaged in, and actual ‘impact’ in most cases, due to the constraints of the system.

resultant effects generated in the system: resultants of the exodiadosis of that particular activity.

The first example points to a decidedly morphoteleological generative activity: towards the self-valorizing strategies of the self-same attractor (in promoting the mimetic recursion of ‘special interests’)³⁰⁷, as well as towards the inherent deception which is part and parcel of the sustenance of that activity. The second example is more in alignment with the implicate activity: the free dissemination of information, as well as participation in broader arenas of coherencing, points towards mutagenesis, bioresonance, and the intrinsic or implicate intelligence of human beings in operation. As alluded to before, this simplistic example does not delve into the more intricate questions inherent to the above unfoldment (such as its interactivity with the broader span of cultural evolution, as well as with the particulars in the domains of economics, politics, and society); for now, it acts as a broad metaphor in the specific case which helps to illuminate our upcoming conversations. The problems which arise in this particular case will be resolved in the next chapter via application of the general case of the implicate metaphor. For the time being, we will

³⁰⁷It is important to remember that these are descriptors of the generative activity, and do not refer exclusively to the meaning of self-valorization in the context of Marxist inquiry, for example. Marx's use of the term self-valorizing is an exogenation of the generative activity of self-valorization as denoted herein, and thus should not be a limiting factor upon our understanding of its scope.

point out that 1) there is an inherent deception in musicking which participates in morphoteleosis, which is analogously linked to the first case; wherein sustaining a lack of disclosure about the nature of the built perceptual universe the listener (and society) inhabits culturally as well as biologically³⁰⁸ intrinsically recurses the atomized landscape (in complicity with ‘government’, ‘authority structure’, ‘genius’, ‘expert’, and ‘canon’; always in complicity with some form of authority abstracted from the autonomy of consciousness), and implicitly misuses that natural faculty towards the imprisonment of the human being within an atomized landscape, or theatre, and 2) there is a concomitant participation in transparency about the nature of this built perceptual universe, and inquiry into it, which is intrinsic to musicking which exogenates the implicate activity³⁰⁹: it thus inherently returns the listener to the continuum/flux, to bioresonance, as well as to their own implicit participation in the self-organization of the universe, and thus represents the re-automatization of consciousness in activity.

³⁰⁸ I ask the reader to examine the degree to which the most reductive examples of pop music fit this description.

³⁰⁹ As analyzed in Splitting the Atom, we may observe streams of music which implicitly unveiled the atomization of the built perceptual universe, and a gradual transformation wherein streams of music began to more explicitly unveil this landscape, culminating in music as a perceptual, ontological, and phenomenological inquiry for the listener, not just for musicians. As this inquiry began inside the musician, we may also say that the musician’s inquiry becomes the listeners, inevitably, in that the geometries of the implicate intrinsic to this are transmitted in the musicking activity.

Essential to understand is that musicking is a translation of, or arrangement of, a more fundamental order of vibratory expression, or organization, which the coherency apperception interacts with as, as well as exogenates/cognizes simultaneously, as its natural function. As this order of organization is subliminal to our conscious purview, we must engage in deeper inquiry to uncover it; this once again reiterates the value of new methodologies of inquiry, such as pedagogical listening and Deep Listening, which, through revealing a meaningful vibratory conversation within the praxis of direct experience and vibratory processes, unveil the hyperbolic edges of our own *a priori* assumptions, our processes of atomization, as well as their dissolution; they thus effectively increase our conductivity.

Let's now shift our radio metaphor once again, from the domain of the dictatorial country, to that of the coherency apperception and radio transmission/reception. Just as a radio receiver tunes into different 'stations', there may be seen to be diverse streams of activity³¹⁰ which the coherency apperception 'tunes' into, or aligns with, much as a radio does. These streams of activity are the unfolding vibratory information: isomorphically unfolding like music. In actual unfoldment these streams (the various 'radio stations' in the domain of coherencing)

³¹⁰ Many people talk about quantum information, but I prefer the term vibratory information, as it stresses the isomorphisms that will replicate in music. In addition, 'information' implies something static and linear in too many circumstances, when what is actually occurring is an unfolding activity that is dynamical.

are not separate, but in infinite dynamical interactivity. However, we will begin with this metaphor to functionally describe the phenomenon.

The artist, through their embodied process, explores this field of activity (that of coherencing and the implicate geometries). They ‘tune into’ various streams through the interactivity of their sensori-motor engagement: through their embodied process. One artist explores various themes at a piano, another discovers musical ideas while taking a walk on the beach. As they do, this ‘tuning’ into a stream of coherencing occurs. Sometimes the coherency pattern is discovered through the embodied musical process, and sometimes the embodied process is a resultant of an attempt to realize a coherency pattern discovered in the larger embodied process of life. The mistake is to try and linearize the process: the coherency spike may occur during composition, or before it; and it may even occur after it. The coherency apperception exogenated in a particular piece of music may have occurred 60 years before its composition, and the artist may have spent their entire life discovering how to realize it.

A synchrony spike in the artist’s instrument (the body/consciousness/listening simultaneously) signals a particular coherencing pattern which has stimulated their apperceptive coherence matrices; this is how we have visualized the processual unfoldment as it occurs internally. Responding to this spike, the artist then realizes musicking which translates this particular coherencing pattern. As mentioned above, these coherency spikes may even be discovered after the compositional process. At the premiere of an indeterminate piece, a broad smile is observed to spread across the

composer's face: they have discovered the coherency spike they created the process to facilitate unearthing.

As mentioned, the apperceptive coherence matrices may be mimetic or bioresonant in their basic generative alignment; self-same or self-similar. Upon this praxis, they will produce coherency spikes either 1) in response to a coherencing activity which is mimetic and thus familiar (operating in this case like facial recognition software, and thus no more creative than artificial intelligence), or in response to an apperception of coherencing itself, as a phenomenon. A competently cultivated coherency apperception is able to recognize coherency in new patterns as they unfold (through its bioresonant apperception) that a mimetic coherency apperception (which relies upon previous patterns) will filter out. Thus, in the case of a bioresonant process, the instrument is literally registering a spike in response to coherency itself, as a phenomenon, and not mere mimesis of a pre-determined pattern or form at the subtle level of consciousness. This will only occur if the embodied process has been cultivated to facilitate this. Hence bioresonance is aligned with the implicate activity, and mutagenesis; the mimetic is aligned with the explicate activity, and morphoteleosis³¹¹.

The difference is between the recursion of reified patterns, and actual contact with the complex, unfolding activity of life: the general case of coherencing itself: the

³¹¹ The praxis of this spectrum is outlined thoroughly in Fig. 2.

implicate whole. At first glance this distinction may appear trivial. Unlike a radio, where the receiver passively absorbs a linear stream of information and then translates it, the coherency apperception is in dynamical conversation with these streams of vibratory information, or streams of activity, all of the time. It is, like them, of the nature of verb, not noun. Thus, when it is reduced to morphotelesis and mimesis, it may become atrophied in its natural function; this is what has happened too often in the modern populace. The resultants are to be found in the artificiality of intelligence exhibited in far too many cases (in contradistinction to the implicate potential), and in the reductive capacities displayed all-around: in intellection, listening, seeing, in creative capacities, etc.³¹² The wholity of these reductive processes is rooted in atomization, an endemic generative activity which will take the entire planet down with it if allowed to; the goal of this text, and of my work, may be visualized as the reversal of the momentum of this activity historically, and the effecting of a cognitive inversion at the level of individual and society (in solidarity

³¹² This is a product of over-mediation, atomized education, poor nutrition, and multiple other factors which have contributed to the atrophy of their inborn implicate intelligence. I seek not to caricaturize modern man, but to lucidly observe the abhorrent situation which we have created, wherein the inborn capacity for creative infinitude has been egregiously caged, atrophied, and actively silenced and shamed on the social stage. It is a situation which we all must develop compassion for, as well as engage in dialogue about solutioning in regards to.

with emergent streams) which reawakens these atrophied faculties, and liberates humanity from their atomized perceptual cages, or theatres.

To continue to cultivate a cultural milieu which so comfortably permissions morphoteleosis³¹³ is clearly a mistake. Another mistake is to cordone off a period of time wherein we are creative, and define the rest of our life activities as un-creative; we are in fact disseminating the streams of activity we are participating in all of the time, whether musicking, or driving an automobile³¹⁴. Synechodiadosis³¹⁵ is the vibratory reality; our exometaphrasi and exodiadosis as activities which begin and end inevitably dissolve into this unbroken dissemination of coherencing.

Just as a musician transmits generative qualities through their musicking, these streams of activity which our coherency apperception is ‘tuning into’ all of the time transmit generative qualities through their unfoldment, which in turn are exogenated through our life processes. Thus the discovery of which streams of information our apperceptive coherence matrices (and thus coherency apperception) are participating in is akin to pulling our skeletons out of the closet, getting sober, or

³¹³ Morphoteleosis (as well as the teleomorphic impulse) may be understood further to be particular cases of the general phenomena of atomization, elucidating specific terrain of, as well as the larger nature of, the unfoldment of said phenomena as interpolated through the human system.

³¹⁴In addition, what we receive and what we transmit have a dynamical interplay that is at the heart of understanding the actual impact of musicking in all domains. It is what is at the level of musical process.

³¹⁵ Unbroken dissemination.

any other metaphor wherein the understanding is that 1) we are not fully aware of what we are presently creating at the level of subtle process, and 2) once we do, we will discover that much of what we are creating is impactful in ways which we did not fully understand, and 3) as we inquire into these further, and our impact therein, our creative activity will naturally reorient, and self-equilibrate.

(Note: An addendum to this chapter may be found in Appendix F.)

Third Attentional Inquiry

1) (2-3 minutes) Practice allowing sounds to be as they are, as outlined throughout.

2) (5-10 minutes) Find a pair of earplugs and place them in your ears. Pay attention to sound as it is, inside of the body, using the methodology employed for ‘allowing sound to be as it is’, and applying it to this internal sonisphere.

(Note: If your perspective currently is that there are no internal sounds, please try the following: first, find the quietest sonic atmosphere that you possibly can, and practice attention to silence/internal stillness (p. 359). Second, with earplugs in: consciously try and make the body be completely silent for 10 minutes [listen closely as you do this to check the results of your experiment]. Try as hard as you possibly can.)

Vibratory Isomorphism Theory

With earplugs in, one observes this internal sonisphere to be rather conspicuous - it has its own reverb, its own indeterminate phenomenon, its own unfoldment – it is a veritable miniature universe. When one takes the earplugs out, one may imagine - how is sound resonating in this internal sonisphere when one is not consciously attending to it? Or, how is it coherencing in this concert hall? One so omnipresent that we cease to notice it (like microsounds in an exterior acoustic space) – and it becomes the implicit background of ‘the space’³¹⁶. How does this implicit internal sonisphere interact with my ‘conscious’ experience of sound, and my cognition of exterior sounds, in every moment? And more importantly, when I listen to music?

When I practice this exercise, it is like the great sigh of a natural reverb in exterior acoustical space, as my breath floods in and out. Pulsing, rhythmic, but noticeably different with every breath. No two breaths are the same; tiny microsounds interject themselves, creating microrhythms; revealing the luminous corners of a complex dynamical system just begging to be explored. In this great hall, I become aware with awe: all musicks of all time have resounded herein.

As I scan my body in each of its unique corners, I listen into every local acoustic ecology - each with idiosyncratic cyclicities and vibratory emanations. I

³¹⁶ In this case, the space we take with us wherever we go.

imagine musicking throughout all time as an isomorphic exegesis of these unfolding patterns, whether consciously recognized by those creating it outwardly, or not. And whether related to in the particular or the general, always intimately related.

I imagine musicians throughout time workshoping their music in this laboratory; whether consciously or not, intrinsically exploring the complex interactivity between vibration and nature and consciousness and neurology and gastronomy and everything in between - within themselves, implicitly. And now, at this historical moment, explicitly.

And then I remember that within and without are constructions, statistical complicities on the stage of being 'human'. I laugh, remember my breath, and allow my listening to guide me into the next stage of the unfoldment.

Musicking=coherencing³¹⁷. From the traditional 'human' perspective this seems naive and misguided, a vanity. We have discussed systems as constantly moving towards higher and higher states of coherence. Locating musicking and coherencing as synonymous seems to imply that the world is 'always getting better', when clearly ample evidence for many of us drives home the fact that this is not true. Economic inequity, ecological crisis', war, disease, famine, psychological turmoil -

³¹⁷ From one dynamical perspective, musicking is the carrier wave for coherencing; from a deeper perspective, there is no dividing line between their activities. This is contiguous with the understanding that an ensemble of two instruments can simultaneously be observed as two separate dynamical systems, and one dynamical system composed of both.

all produce new resultants every day which cause an inquiring mind to question the coherence of our human activities – of whether we'll even last on this planet another 50 years.

In music, it is difficult to even begin quantifying how many historical streams of musicking have been broken completely as the colonial exogenation of the teleomorphic impulse has 'had its way' over the centuries. These streams of musicking will never be heard again. The loss is inestimable, and any activity we participate in which forgets this betrays the conscience of our species.

Similarly, in the human experience of sound, it is difficult to even begin quantifying the impact of heavy exposure to sonic pollution, media, consumerized art expressions, etc. (in inverse relationship to a declining exposure to fine art) upon the modern mind and its capacity to relate to art. If the system is moving towards higher and higher states of coherence, where is the evidence?

We must inquire into dynamical systems a little further to understand this; in so doing, we will contextualize all of the conversations that have come before in this text. The key phrase is 'human perspective'. Basically, we are looking to see the coherencing activity of the implicate reflected in an activity of coherencing as we perceive that phenomenon from within the human frame.

An explicate activity may also be defined as a particular case of the implicate. In terms of 'human perspective', this is a useful understanding. From the purview of a conscious observer in a body, coherencing is in relation to the particular of that frame, which expands beyond the notion of an intellectual frame to include the sensori-motor

engagement, as well as the dynamical frame of an inhabited built perceptual universe, along with the entire historio-cultural context implicit in that. We cannot get out of the implicit framing of our biology, but we can learn how to engage with it more coherently.

Thus from this ‘human perspective’, coherencing is conceived of in terms of two: coherency, and incoherency. More fundamentally in terms of human psychology in the normative modus: what I prefer, and what I don’t prefer. The manipulative quality of cognition which results attempts to exclude that which we do not prefer (in alignment with the self-same delusion interposed upon the filtrative mechanisms of biology).

Excluded instances are conceived of as ‘incoherency’. This is the apperceptive coherence matrices operating in mimetic form - morphoteleosis at its root: ‘I prefer _____’. All else will be excluded, filtered out. The psychological faculty has co-opted the filtrative faculty, and placed it into forced servitude of its own obsession with self-perpetuation – attempting to re-create the world in its own image via this filtrative faculty – and to discover a singularity of expression which satisfies its delusional manifest destiny in the realm of consciousness. It is, once again, waiting for Godot, and it will inexorably wait forever.

We must thus understand the activity of not-two. The activity of the implicate is what is always fundamentally coherencing at the deeper level of analysis. Explicate systems (like humanity) embedded within it do naturally move towards higher states of coherence – but when their activity of coherencing becomes contradistinctive to

the activity of coherencing of the dynamical system in which they are embedded (the implicate order(s), which is/are much bigger than them), a friction is inevitably experienced, and in time the unfolded order embedded within the implicate will be forced to reorient and align with the praxis of coherencing activity therein. Thus, modern world events are only incoherent from the frame of two – from the ‘human perspective’.

The same process occurs locally within the human organism during the attentional inquiries. The 5% is embedded within the organism as an explicate frame. Inevitably, in time, it will be reoriented to align with the activity of the organism – the intrinsic activity – whether that time is near or distant. Further, over the longer span of time, it will inevitably reorient to the larger implicate activity, for the reasons outlined above in regards to the larger system. Our experience of a conscious identity may be understood to be merely vacillations between dissipative cycles and particular cases of coherencing which occur within that larger unfoldment. We must thus begin to talk about particular cases of coherencing (explicate; two), and the general case of coherencing (implicate; not-two).

Coherencing is thus understood within a multi-dimensional frame, just as musical process has been. In terms of the coherencing activity of the implicate, who is to say that the movement towards higher orders of coherence is going to look more or less pleasant from the human purview? More or less of what we personally wish to see? What is the difference between musicking which understands this, and

musicking which does not? What is the difference between a musicking culture which understands this, and one which does not?

Explicate activities are simultaneously a particular case of coherencing, and the general case of coherencing. The apperceptive coherence matrices in bioresonant form can navigate this form of complexity. In mimetic form, they cannot: there will be a constant tension as the teleomorphic impulse attempts to re-create the data coming in 'in its own image', and filter out everything which does not match this frame.

The conscious observer (a) can become more nearly aligned with the activity of the implicate through inquiring into the built perceptual universe it inhabits, the seeming solidity of it, as well as the unquestioned *a priori* assumptions and processes which are the generative roots of its construction. This is done explicitly (as in Deep Listening and the attentional inquiries) as well as implicitly (through participation in implicate processes, such as reading Husserl, or performing Lecture on Nothing, or performing a Deep Listening piece [all of which I argue constitute this], or any other activity which provides a forum for participation with the implicate activity through the creation of an explicate frame which exogenates said implicate activity.) Quite simply, what we participate in, recurses in the dynamical system.

If I have a theory, then it is no theory at all; at least not in terms of the atomized, explicated laboratory³¹⁸. The way forward is simple: within the praxis of the implicate laboratory as ‘defined’ herein (or more accurately, pointed out, as it is implicit, and has thus been present ever since) is a ‘new’ forum for approaching and testing theory, which is self-validating for the sincere inquirer.

Theory: All life processes, as well as everything we need to learn about sound and music: from vibratory processes, to the psychological experience of man, and everything in between, are **implicit** in the direct observation of sound and her unfoldment, and can be extrapolated thus. (p. 122)

The laboratory for engaging and testing this theory has been discussed throughout; it is right inside of our chest, metaphorically and literally. Its corroboration is found in the processual unfoldment of the inquiries engaged within it, and thus the way forward for this unfoldment must be made clear: the metaphorical path must be cleared of the mediative debris which we have accumulated through centuries of cognitive dissonance in the generative modus’ of artifaction,

³¹⁸ Explicate = To explicate, and most theory is an attempt to satisfy the false manifest destiny this points towards, analogue to the quest to differentiate ‘our’ intelligence from that of life processes. As reiterated throughout, this has been the normative modus of the Western intellectual tradition, and is in dire need of revitalization and critique beyond the further atomized borders of ‘reductionism’ as a limited discourse: instead the entire praxis of laboratory engagement must be re-oriented, so that it reflects an understanding of this unfoldment, rather than mimetically reiterating reductionisms’ underlying generative qualities in the process of critiquing it.

manipulation, and machination which I call morphoteleosis, and the tyranny of the self-same attractor which animates these in the dynamical system. Which have arrested this unfoldment before it could be observed, and its resultant implications understood. When the path is ‘swept’ of these, so to speak, the theory is self-evident in the unfoldment which ensues, and the metaphorical path may be simply ‘walked’ then.

“I can see spread out before me the endlessly open plains of true philosophy, the 'promised land', though its thorough cultivation will come after me”

- Edmund Husserl (Sawicki)

Husserl refers specifically to the sort of practicum of experiential unfoldment encouraged herein, as well as in other emergent streams (whether explicitly or implicitly). I did not, in fact, come to this work through Husserl; it was only after engaging the implicate methodology for many years that I myself found Husserl and observed in him an almost one-to-one analogue to the processual unfoldment I had directly observed in this practicum myself. So it wasn't front-loaded: it emerged from the unfoldment, and was thus self-validating³¹⁹.

³¹⁹ In terms of how this practicum was initially instigated, I have had numerous important teachers and influences over many years. In terms of the particulars of the implicate methodology as it has been presented herein, there are two teachers which stand out as needing to be mentioned: the great meditation teacher Adyashanti produced a CD many years ago in which he taught meditation from the perspective of ‘allowing everything to be as it is’. I had owned this CD long before I developed Sound, Listening, and Consciousness; and at a certain point in the process of

I believe Husserl was aware that a practicum of application in this modus was necessary to fully realize the phenomenological reduction, which is the cognitive turnaround, for all of the reasons outlined in this text, and that this is why he says what he does in the quote above; it has taken this long for academia to mature to the point where rigorous inquiries of this nature are beginning to be embraced in niche corners. But we are ready, as the praxis of the body and consciousness has been opened up dialectically, revealing the access to enfolded orders of organization they afford.

The inculcation of pedagogical listening in musicking stands as a first step towards expanding its oeuvre more fully into the emergent direction which so many of its artistic giants over the last 100+ years have either vanguarded, or prepared the stage for³²⁰. I believe it is an imperative which is unavoidable, an immanent state

developing the course I had a revelation about the processual wisdom of this approach and its intersection with neurobiology and cognition, which inspired me to include it as ‘allowing sounds to be as they are’ in the curriculum. After years of sharing this meditation with others, and practicing it myself, it’s veracity has proved itself time and time again; it now stands as the cornerstone of the sonic inquiry element of the implicate methodology.

Ramana Maharshi, an Indian sage from the middle of the 20th century, taught a methodology of inquiry wherein the question “Who am I?” is posed, and addressed meditatively, rather than intellectually, which greatly influenced the question-based implementation of the implicate methodology shared in this text.

³²⁰ Either explicitly, or implicitly.

transition shift in the system which will, like the attentional inquiries, be self-validating once allowed to unfold completely in the tradition. It represents the future of musicking: a ‘promised land’ which is not out there, but rather nearer than our own noses: so immanent that said quality of immanence is in turn further reinforcement of the processual state transition shift which it brings to life, potentiates, and facilitates.

In addition to the above theory, which is self-evident in the bioresonant laboratory of direct experience, I have another theory to share. And one which actually exists in the laboratory of intellection. But first I would like to point out that, once the above has been unfolded thoroughly in the BLODE³²¹, it also becomes self-evident in a laboratory of intellection informed by that unfoldment. Which expands includes that data, and does not exclude or filter it. Thus we have come full circle – from saying that I have no theory at all, to sharing theory consistent within a dynamical signal chain which is an exogenation of the cognitive inversion – which is the phenomenological reduction in unfoldment – to returning to the explicate laboratory of intellection, and re-engaging theory therein. Thus implicate intelligence is understood to not be in exclusion of explicate intelligence - rather it includes and contextualizes explicate intelligence within a dynamical self-equilibration of implicate and explicate processes; in a field of not-two³²².

³²¹ Bioresonant laboratory of direct experience

³²² It is thus simultaneously a realization of the notion of tradition outlined in Manifesto, as well.

In the chapter entitled Coherencing, we discussed the operation of synchrony spikes and the intrinsic enactment apperception inside the composer as a way of understanding the coherency apperception. As the intrinsic enactment apperception is apperceiving unfoldments of the music in these examples, the process naturally extends into temporal space, as well. Thus the ‘stop-signal’ which a composer registers as the completion of a composition is not just a synchrony spike emerging in their field, but in the field, as in emerging from the implicate field of potential vibratory unfoldments, trans-temporally and trans-spatially, through the composer. It is the ‘voice’ of that activity, so to speak.

From a simultaneous apperception of every possible unfoldment of their piece of music in every single potential concert hall, as well as every possible cognitive experience of their music (which intrinsically includes every constructed perceptual universe of every potential listener) – as well as the impact of that piece of music (a topic I believe we have addressed only cursorily through the atomized analytical frames we have explored so far) upon that field trans-temporally (as well as its particular impact on biology, culture, the individual, etc.) this stop-signal emerges, informed by each implicitly. It will be in synchrony with the composers’ apperceptive coherence matrices, or it would not have registered a spike. In addition, it will be in synchrony with a new element in our analysis here: the dynamical system which the individual identifies themselves with, or ‘as’.

For example, if the composer identifies with the dynamical system of the 5%, or the 100%, or the dynamical system of a nation, or humanity, or the planet, or a

particular sub-culture, or the galaxy, or the universe, or the implicate order, or their family structure, or a methodology – the coherencing activity of that dynamical system will intimately inter-mix with and impact the particular coherencing geometries which trigger a coherency spike, as well as the ‘stop-signal’ which emerges from the compositional process. It is, quite literally, the self-organization of that system (the one identified with/as) exogenating through the compositional process. Thus a simplified analysis which includes this new element locates the apperceptive coherence matrices as being formed by the particular idiosyncratic geometries (in a spectrum from mimetic to bioresonant) which are resultant of the organisms’ unfoldment in terms of embodied process, intrinsically inter-linked with the activity of the dynamical system(s) which the composer identifies his/herself with/as, whether this is conscious observer (n), or implicate whole, or any other dynamical configuration therein³²³.

A listener undergoes the same process. As they listen, the particular idiosyncratic permutational geometries of unfolding sound are reverse-translated and returned to the field of infinite coherencing possibilities they began in. The same trans-temporal intrinsic enactment apperception as the composer registers the wholity of unfoldment within the infinitude this piece of music has inhabited, as well as the

³²³ This may appear in the form of two, and not-two, congruent with our dynamical frames. For example: composer as conscious observer (n) identified with nation exists in the domain of two, and composer identified with, and thus embodiment of nation, exists in the domain of not-two.

alignment (or lack thereof) between this and the individual's idiosyncratic apperceptive coherence matrices (as well as their dynamical systems alignment as a simultaneity with this, as alluded to above.) The resultant is a whole host of potential experiences, from 'I like', to 'I want to hear again', to 'that was interesting', to 'I do not like', etc. which are further located within the infinitude of dynamical alignments which the above conversation implies.

Thus, whatever they have participated in throughout their life has recurred in the dynamical system, creating the runnels and chreodes which their unique listening activity (synchronous with coherency apperception) falls into: which interpolates this infinitude into their listening experience in this moment. Composer, performer, and listener alike are all inevitably in direct engagement with a trans-spatial and trans-temporal infinitude which the intrinsic enactment apperception only interpolates, but does not contain.

Which brings us back to the possibility, mentioned in the first neurobiology chapter, that the intrinsic enactment apperception may extend to include all of nature in her processes simultaneously: a seemingly impossible claim. Now I am claiming that it extends into infinite temporal space, as well! How is it even conceivable to cognize an infinitude? Cognition has been particularized within an atomized frame which can only conceive of limited possibilities; specifically, a limited set of possibilities which make sense from within the particulars of its own frame. When we understand the organism to be first apperceptive, bioresonant, and implicit in its cognition of the universe (which is also synonymous with a dynamical, as opposed to

an atomized, frame), and that abstractive processes (like hierarchical signal chains in cognition, and an inhabited built perceptual universe as an atomized stage, as well as a conscious observer as a thing, etc.) are then interposed upon that, then there is no problem. In fact, it unveils the level of process in cognition which atomized approaches have never been able to explain, and elucidates why it has eluded them for so long. A new cognitive theory is clearly required to address this level of process; this arises within a larger theory of communication, cognition, and intelligence.

The above points to the re-awakened purpose of the faculty of inhabiting a built perceptual universe intrinsic to a human being – to inhabit one completely, *facile*, as a dynamical tool for discovery of either 1) new particular cases of the coherencing activity or 2) the general case – and then to be discarded when it has served its purpose. As a tool; like the many other tools in the human toolkit, to be used and not to be used by. Its purpose is decidedly not to become the territory for a human's confinement – to become inhabited and ostensibly lost in for 60 or 70 years as an atomized landscape – it is an extension of the intrinsic enactment faculty which allows us to be more skilled navigators of the exterior universe, and is probably what has given us the evolutionary advantage we have as the dominant species on this planet. And then, once we dominated the life around us, we learned to use this same faculty against ourselves, and our task now is to liberate ourselves from that particular historical recursion.

Between effecting the facilitation of the coherency apperception alluded to above, and reinforcing confinement within an atomized landscape, is a world of

difference. I believe the capacity to share complex intrinsic enactment apperceptions, and the communication inherent, has facilitated humans addressing complex problem solving situations evolutionarily – and is thus integral not just to musicking, but to communication and intelligence, as well. We will explore this a little bit deeper in the last chapter. For now, the ethics of morphoteleosis is to recognize that it effects a very real imprisonment in the human organism, in terms of the built theatre of perception, and to unearth and cessate every way in which we participate in it as *a priori* process, towards the ending of the historical recursion alluded to above.

Throughout this text I have stressed the phenomenon of isomorphic similitudes across dynamical systems as being critically significant, and reinforced its endemic presence and integral importance in the processual analysis engaged. After our discussion in the last chapter about translation/reverse translation as a processual metaphor, and the observation therein that these isomorphic similitudes make communication across systems possible (such as observed in electro-acoustic cognition), as well as the observation that the intrinsic enactment apperception extends infinitely, trans-spatially as well as trans-temporally - we are in a position to resolve the implicate/explicate analytical model of cognition presented in Coherencing, from two into not two - in the form of the vibratory isomorphism theory.

The vibratory isomorphism theory states that communication, cognition, and intelligence in all of their forms are facilitated solely by isomorphic similitudes across dynamical systems. Superficial processes exhibit translation/reverse translation

properties between the idiosyncratic particulars of syntactical languaging within the systems in question as illustrated in the previous chapter; in all cases, these superficial processes are merely the medium for this more fundamental level of vibratory communication. The fact of electro-acoustic cognition, the phenomena intrinsic to intracellular communication, music, written and spoken communication, digital communication, transcription and reverse-transcription in DNA, biochemical processes, etc. – no communication, cognition, or life process is possible without isomorphic similitude across systems.

Evidence for the veracity of this theory may be found throughout this text, illustrated through intellection as well as through empirical unfoldment; from the relationship between the sensori-motor engagement and the cochlea, to that between intrinsic enactment apperception, the hyperabstractive geometries of the neurobiology, and coherency apperception, wherein trans-temporal and trans-spatial cognition of an infinitude (Molnar-Szakas et al.) represents a phenomenon which can only be resolved by a bioresonant, apperceptive instrument facilitating it – and which in turn can only be facilitated by isomorphic similitude as an underlying property of systems. No atomized or explicate phenomena could come close to facilitating the level of complexity found therein. As communication at the level we are discussing translates to all life processes, we may state that: musicking is to coherencing, as a wire is to electricity, as all life processes are to vibratory communication, and the phenomena of isomorphic similitude facilitates in every case.

Vibratory communication is intrinsic to coherencing. This theory is consistent with processual unfoldment as observed in the bioresonant laboratory of direct experience; bioresonance as a phenomenon points towards it implicitly. As alluded to earlier, a musician is a sort of phenomenological scientist, and their discoveries in this laboratory are potentially just as cross-modally fruitful as Alva Noë's philosophical expertise has been in the domain of neuroscience inquiry, in terms of enactivist theory.

All sensori-motor engagement in a human being is facilitated through this praxis; intra-cellular communication and biochemical processes, the hyperabstractive neural geometries, canonical neuron function (which can be seen to be contingent upon isomorphic pattern cognition of a 'hand-sized object' within the geometries of its concomitant potential unfoldment, or any other bioresonant and isomorphic permutation of action in relation to the particulars of the body), etc. Human intelligence, no matter how one conceives of it, is inseparable from this phenomenon - it is either distinctly in alignment with it, in the modus of bioresonance, and the implicate - or it is an abstraction of it, in the explicate modus. Vibratory communication is 'what is' at the level of processual unfoldment, and vibratory isomorphism is what makes it possible.

Intellectual discourse may be understood anew in this light: from this perspective, this text has transmitted the geometries of these vibratory isomorphisms in dynamical unfoldment, or coherencing, more nearly than it has the intellectual constructions which facilitated this. Thus this text is itself isomorphic to musicking.

Without the isomorphic similitude intrinsic to our two systems (reader and author), any cognition of this text, and subsequent communication between us, would be impossible. Certainly the idiosyncratic particulars of the English language are used as a medium, but coherencing is the actual activity. Hence it is immanent, like the implicate order, bioresonance, mutagenesis, apperception, and consciousness. As illustrated by ‘digital cognition’, apparent atomization’s of the process (such as binary communication) still only occur contingent upon translation/reverse translation in regards to vibratory isomorphisms as the primary fundament upon which they are contingent.

The vibratory isomorphism theory finds more weight in such simple phenomenon as, for example, the temporal theory of pitch perception, wherein “phase locking” of neural firing has generally been considered random (Howard and Angus 144)³²⁴. Pattern cognition from this fragmented information is akin to facial recognition, a product not of object recognition (in terms of a one-to-one relationship

³²⁴ Although I would consider it more likely to be a factor of bandwidth allocation in the neurobiology, in the same sense that “random” occurrences in a Cage bracket piece are a byproduct of the performers embodied process, and the bandwidth allocation this represents in relation to the implicate order. In other words, the more neural bandwidth being used globally in the organism, the more the basilar membrane will rely upon disparate pattern cognition of isorhythms, and less on direct phase locking – thus there would be a statistical spectrum wherein degrees of ‘randomness’ were denoted. Just as the “information preference” inherent in facial recognition is a theoretically ‘complete’ set of information, but a limited set can still be cognized.

between data sets A [remembered] and B [that cognized in the moment]), but the capacity to, from a complex pattern, isomorphically induct an order of organization. In this case, at the raw neural firing level of the basilar membrane. In other words, some inherent apperception of the permutational possibilities of subtle isorhythms between beats facilitates pitch cognition³²⁵, and temporal pitch cognition is the local phenomenon of that activity; just as some inherent apperception of the permutational possibilities of subtle pattern interactivities between face and environment facilitates facial recognition. I further argue that this simple analogue extends to cognition in every realm of human experience: that every act of cognition involves an inherent apperception of pattern unfoldment and interactivity, and intrinsically, the permutational possibilities of said patterns; not atomized ‘objects’ in psychology which we perceive in a one to one relationship. Not pattern (n) cognition, but pattern (a) cognition: a phenomenon predicated upon being embedded within processual unfoldment trans-spatially and trans-temporally. In the bioresonant relationship between the processual unfoldment of life processes and the organism, coherency

³²⁵ I have chosen the temporal theory of pitch perception as illustration, but one will see that this model applies just as readily to ‘place’ theories of pitch perception, which argues about algorithms but not about general process. In fact, any cognitive activity or theory, wherein the unfolding pattern isomorphisms discovered in the interactivity of various dynamical systems (as observed in the physiology) are found to be integral to the process, may be comfortably inter-nested within this theory.

apperception occurs as an exogenation itself of the isomorphic similitude observed across systems. Upon this praxis everything we consider human is facilitated.

That this is further reflected in the activity of the mirror neuron system, as well as the permutational (dare I say “hyperabstractive”?) activity in all dynamical systems, should be apparent, but should also render the theory self-evident, as this is the praxis of intrinsic enactment apperception; that these may further be understood as inter-nested orders of infinitely interacting isomorphism’s (and not a linear hierarchy) should be further self-evident. Finally, we arrive at the understanding that this vibrational cognition is made possible because the same generative activity at play in the activity being observed is at play in the activity observing; because “I” (and the body at play) am/are nature in her manner of operation and “you” (and your body) are nature in her manner of operation, “I” can cognize “you” (wherein both can be interchangeably replaced by any complex dynamical system in nature). And the implicate principle re-emerges, contextualizing the entire conversation, and once again proving itself self-validating.

Thus intelligence is non-localized, non-temporalized, and de-humanized (where human vanity has imposed an exclusively “human” intelligence upon an activity much larger than it.). Or de-valorized. Or one of the many other metaphors we have explored: or simply, disentangled. Just as easily as we can interpose the metaphor of ‘entanglement’ upon the phenomenon of non-locality (which reveals the inter-penetrating nature of our dynamical processes, and does not intrinsically contain the value judgment which the concept ‘quantum entanglement’ implies, locating us in

an atomized universe where our interconnectivity is fundamentally a liability), we can instead interpose the metaphor of disentanglement upon it: wherein modern man, having unveiled the phenomenon of non-locality, is extracted from the fiction of his built perceptual universe and returned to the quantum continuum/flux from which he came in a simultaneity with understanding the phenomenon, and its implications.

I hereby officially propose that we replace ‘quantum entanglement’ with ‘quantum interconnectivity’ for this reason, as the former does a poor job of communicating the actual import of the phenomenon, merely illustrating the degree to which we inhabit the built perceptual universe of our intellected theatre; this theatre has created an existential miasma out of the rather beautiful fact of our interconnectivity, the revelation of which is the most salient aspect of the phenomenon (just as the fact of consciousness is the most salient aspect of that phenomenon).

The atomization of the conscious observer (n) becomes rather conspicuously hyperbolized in the cognitive inquiry. Degenaar and O’Regan, in critiquing atomistic applications of Bayesian models in recent cognitive studies, have stated: “Note that while perceptual development may be described by Bayesian models, this does not imply the existence of such Bayesian models within the brain.” (Degenaar and O’Regan)

In typically atomistic fashion, Howard and Angus in Acoustics and Psychoacoustics describe the place theory of pitch as being the resultant of a ‘frequency analysis’ performed by the basilar membrane (Howard and Angus 121).

Now the basilar membrane is an actor with a calculator and graph paper performing frequency analysis³²⁶!

One will find the Western academic disciplines rife with such blatant anthropomorphizations which side-step the reality that cognition, as well as intercellular activities, as well as all other transactions in nature between dynamical systems, are facilitated by the same isomorphic vibrational similitude exposed herein. That a composer is in a position to point this out³²⁷ should be no surprise; as mentioned before, a composer is an expert in 1) vibrational processual unfoldment, and 2) the particulars of human experience, two arenas which the modern world has endemically suppressed, as the revelations which they unearth³²⁸ cause the atomization of the built perceptual universe relied upon in the perpetuation of intrinsic power structures to crumble from within³²⁹.

³²⁶ Just as the brain is ostensibly enacting the statistical actions intrinsic to Bayesian models in Degenaar and O'Regan's critique – in both cases, the metaphorical nature of languaging has been discarded, and the atomization of process has reared its ugly head in the inaccuracies produced in the resultant interpretation.

³²⁷ Although I am not alone, as the vibratory isomorphism theory is implicit in everything Mandelbrot described, for example.

³²⁹ From this understanding, for example, intellectual learning is embedded within an atomized built perceptual universe of experienced intellectual discourse, and is thus experiential, with concealed *a priori* filters and processes which exogenate this

Dynamical Listening Observations

I practice gestural listening as I listen to Ligeti's Lux Aeterna through headphones; the opening singularity in the vocals invites me to deeply listen, without needing to ask me to. It feels like an old friend is calling, preparing me to receive the unfoldment of complexity (which ensues) in stages.

When the vocal range of the ensemble expands to encompass its full breadth, the music speaks with an authority and wildness reminiscent of the fractillious cathedrals of nature, and a secret wisdom therein. And when it contracts into intimate micro-terrains, it ferments within itself an infinite inter-nested permutational geometry, like the interior of a forest bed; you can almost smell the steam rising off the woodchips in the morning as they ferment.

I feel like an ancient mycelium, or an equally ancient root – expanding in deep time - as I listen to these slowly morphing cluster passages. Both unchanging, and simultaneously the essence of diversity itself – the paradox of stillness and unbroken motion married.

As I listen to Lux Aeterna, it is clear that music, consciousness, and the interactive dynamical system they form as one are of the nature of inter-nested and

atomization; going further, all of this activity is inseparable from coherencing as a whole systems unfoldment, and can only be resolved through the return therein.

unfolded/enfolded orders - I am listening out from, and I am listening to, simultaneously, in infinite interactivity.

As the piece closes, the sustained major 2nd feels like an awakening - as if I have never heard a major 2nd before. As if the entire piece was about getting from the opening singularity, to this major 2nd; it's just that we just had to get there patiently, in stages, to really get there. To really know there.

Fourth Attentional Inquiry

1) Pay attention to sound and allow it to be as it is for several moments. Now allow that to go. Pay attention to light and allow light to be as it is for several moments – and then allow that to go. Pay attention to sensations experienced in the bodily engagement for several moments, and allow those to be as they are – and then allow them to go. Pay attention to thoughts and feelings for several moments, and allow those to be as they are – and then allow them to go. Pay attention to smells, tastes, etc. and allow those to be as they are for several moments – and then allow them to go. Pay attention to your experience – in its entirety – and allow it to be as it is, for a period of time. And then allow it to go, completely.

2) Apperception is what emerges when experience, and everything which appears in the frame of experience, is dropped rigorously. If anything else arises, just follow the directions above and allow that to go, as well. Allow apperception to be as it is – the totality of attention which emerges when fragmentations of mind are dropped. If this inquiry is engaged rigorously, it is possible to arrive at an

apperception of apperception through it.

The Apperception of Apperception

The apperception of apperception points towards an activity of coherencing which aligns with enfoldment, rather than with the unconscious unfolding of the pre-determined momentum of mimesis. It represents a complexity singularity in the domain of consciousness, similar to that found to be exhibited in Deep Listening pieces in the chapter entitled Translation/Reverse Translation³³⁰. It is the cognitive inversion: the coherencing of coherencing, beyond dissipation and coherencing in the particular case as a quantized cycle of recursion into an accelerated unfoldment which does not cease at any point³³¹; it is brought alive so intensely that it becomes a

³³⁰ Apperception of apperception represents a state transition shift from the realm wherein atomized notions of attention are enacted, to the realm wherein dynamical unfoldment of attention is realized in a broader field of engagement.

³³¹ This inquiry is analogous to the earlier one into whether or not we can drop our psychological filters completely, and its connection to musical history. Is it possible to become an instrument of synechodiadosis, of coherencing as an unbroken activity, as an implicate activity, rather than as explicate activities which begin and end like the recursions of Thomas Kuhn's conception of scientific revolutions? Similarly, can we 'not' be an instrument of synechodiadosis, in terms of our unbroken interconnectivity with all of life?

veritable living flame³³².

Vacuum dynamics are one of the best metaphors for coherencing that I have found. Flame, which will ignite wherever there is the right fuel, facilitated in exponentially increasing orders of coherence by vacuum dynamics³³³; this is what happens to the coherencing activity when the apperceptive faculty leaves the atomized domain and becomes an instrument of increasingly enfolded orders of coherency in the continuum/flux.

I believe that this is further analogous to concepts of soul, *rasa*, and similar concepts cross-culturally. As we saw in the CDS section, it is fundamental to musical education that there is a transmission of competencies, and a mimetic conversation in terms of knowing how and tools which gets the student oriented. And then there is intrinsically a moment when their coherencing activity becomes sustainable in and of itself, in a fashion not limited to either competencies, the mimetic conversation, or any dependency upon the teacher. At this point, they have kicked off the training wheels; this is the coherencing of coherencing.

If we start to extend this outwards, we begin to tie together our initial inquiry into the generative activity underlying. The operations of intelligence, creativity,

³³² Flame not being an archaic metaphysical reference, but rather an understanding that vacuum dynamics, and the maximal coherency of flame activity it facilitates, is an incredibly accurate metaphor for the coherencing activity, and the creative process.

³³³ Which creates the conditions for flame.

vibration, and physical systems, are not separate. We find isomorphism's throughout; there is no point where the unfolding activity of one ends, and another begins, if we examine them rigorously. Mandelbrot pointed out the isomorphic relationships throughout nature which comprised a fractal nature therein; I point out that this generative activity only appears to be arrested at any point (by the interposition of our psychological filters, which we have inquired into in the acoustical domain, but which extend into all human domains) and is thus unbroken dissemination of the coherencing activity, or synechodiadosis.

The empirical study of dynamical systems, from within said systems, can be seen as a revelation 1) of the nature of said systems, and this unbroken activity, and 2) of the nature of our cognitive filters, and the construction of experience, and 3) of the fact that, as musicians, we are scientists of sound, and of the processual unfoldment. Thus, the inquiry unveils the entire operation of our art, as well as its future, 'in the process'.

The implications of this are profound, and cannot be underestimated. When we realize that there is no other realm, no 'other' place to look for consciousness, and that its activity is not different from vibration, we unite all fields of study as competencies exogenated from the implicate. They are like the 9 *rasas* exogenating from the one. We understand that each is observing, discoursing about, and exploring this same activity from different angles, from different perspectives. Through the lens

of the empirical/intellectual biangulation methodology cultivated herein³³⁴, we explored just this: wherein the similarities and differences of the study of the fractal from 'outside' the fractal, and looking out (or hearing out) from within it, are seen as implicate metaphors for its activity which collide in the complexity singularity alluded to above.

Thus all the properties of vibration: its cyclicities, the reinforcement of amplitude through aggregation, cluster formation and interactivity, intervallic relationships, phase cancellation, etc. are mirrored isomorphically in the hyperabstractive properties of the neurobiology, as well as in the geometries found in the substrate of such, the development of sonic awareness and psychology as explored in Tabula Rasa as a cultural unfoldment, in the unfolding of a piece of music, as well as in the sub-lingual processes of coherencing it is an exogenation of, etc. across all processual domains unto infinitude³³⁵. And while we cannot answer the question of what consciousness is (n), each of these unveils its activity in bas relief: they point towards it, as its processes are not separate from them. Thus we have

³³⁴And which is a direct response to Varela's, and other's acknowledgement of the necessity of said methodological directions. And which naturally expands into an 'omniangulation' which is a processual reflection of the fractal nature of reality.

³³⁵ This is at the level of the diversity, the explicate. At the level of the unity, there is only what is implicate, which can only be addressed metaphorically, and for which all activities are also a metaphor. They point back to that which is unfolded within them – not within a built perceptual universe, but within the very substrate of their being.

simultaneously infinite information, and none at all, when it comes to consciousness: infinite in the realm of processual unfoldment, and zero in the realm of the reified object. The simple is the new complex.

Consciousness is the implicate. It has eluded study precisely because all study of it is a reduction of its activity; the implicate principle clearly highlights this. Only those willing to let go of their explicate notions of such (the impulse towards teleomorphic conclusions), and confront/enter into the continuum/flux directly can actually engender the competencies necessary to negotiate a universe of inherent uncertainty, indeterminacy, and interconnectivity. The ‘hard’ problem has only been “hard” because we assumed we could resolve it in the morphoteleological field of nouning, wherein it can never even be touched, let alone ‘solved’.

When we arrive at vibration and intelligence as being not separate operations, but rather one, we also arrive at a few simple principles which can be treated as the best metaphors we have at this historical moment for how this isomorphic relationship unfolds. Intelligence operates at its base upon sublingual apprehension of similarities and differences, and this is then abstracted, recursing through the dynamical system in an ever-increasing unfoldment of complexity. In fact, Pribram's view of the brain points to this being precisely what happens on the mechanical level of vibratory unfoldment, wherein, through vibratory filtration, the brain negotiates the similarities and differences of the field in which it operates. The vibratory isomorphism theory extends this into a general principle which can then be expanded further into the domains of cognition, communication, and all life processes.

Sonic vibrations operate in the same way: similarities and differences recurred (or hyperabstracted) through the dynamical system(s) in unfolding patterns, which isomorphically influence continued recursive unfoldment, create a feedback loop. More complex developments are self-equilibrating exogenations of this generative activity, and thus represent unfolding orders of it.

In the ways that vibrations reinforce similar waveforms, phase cancel opposite ones, in the ways that harmonic intervals seem consonant to a cognition operating upon the same basic processual phenomena, and the concomitant perception of intervallic relationships, etc. these activities are all mirrors of each other, in an infinite hall of mirrors.

They are further mirrored in human social interactivity. From the perspective of a vibration (if we were to imagine a vibration having a perspective) what would be significant about the landscape it interacts with 'socially'? The similarities and differences between surrounding vibratory emanations would immediately become apparent: the phase difference between this vibration and myself, the way this one reinforces 'me', the way that one seems 'bigger' than me (due to its amplitude), etc. Thus the psychological world is not excluded from our inquiry, and may be elucidated by it, as the 'self' would intrinsically be defined in relation to the particulars of these similarities and differences in unfoldment.

Are we in phase? Out of phase? A harmonic of each other? Dissonant in relation to each other? This is in some way exactly what two human beings dialogue about implicitly when they first meet each other, at a subliminal level to the exterior

dialogue which occurs³³⁶. So we can understand the activity of cognition from the activity of vibration: as unfolding processes recursing upon the generative activity oriented to in consciousness. We experience the runnels and chreodes of our life trans-temporally, so it may not appear to be this simple, but it is: as transformation of the activity comes not through eliminating this trans-temporal and trans-spatial apperception, but rather through including it, as all of the attentional inquiries have facilitated in this text.

Intention, inasmuch as we can speak of one, is generally perceived of as a sort of rudder which orients action and unfoldment. As in our attentional exercises, one may observe a particular pattern of unfoldment resulting from an attentional activity; is this the resultant of intention? Is our musicking resultant of intention?

Importantly, intention exists within a unique vibratory coherencing pattern, similar to Sheldrake's morphogenetic concept³³⁷, which is impossible to perceive directly. This is the 'real', or the unfolding continuum/flux of identity, as we have talked about them here. We cannot even begin to perceive it lucidly unless we have disentangled from the incipient morphoteleological noise (the psychological corruption of the filtrative processes and the self-similar nature of reality in an

³³⁶ Vibratory processes then become an excellent model for dialogic process, as well.

³³⁷ And this is related in turn to the activity of stable forms, etc. both in evolutionary process, as well as in musical process. The full analysis of this activity will have to fill another volume.

attempt to recreate it in the image of the self-same attractor, and the illusion of self-sameness), enough to not confuse the self-same attractor for it.

This is why I have emphasized processual unfoldment, and the implications of that, and waited until this late in the game to mention this essential angle. Too often discussions of “who someone is” or “what their style is”, or even “who we are” is so filtered through these constructed frames that it is pointless to even try and proceed until these have been addressed, as what we are looking at is almost exclusively our filtrations, and not even a semblance of what is. And intention is an exogenation of this.

That being said, the revelation of this vibratory coherencing pattern sans self-destructive filtrative habits is, from one perspective, the whole objective of the disentanglement process, and the embodied processes shared herein; it is the fruit of it. Soul, *rasa*, the apperception of apperception of apperception, the coherencing of coherencing: call it what you like, the activity they point to is the same. The apperception of apperception from the inside, the coherencing of coherencing from the outside, coherency apperception from an analytical frame which seeks to reveal the generative roots of human creative process, *rasa* from the perspective of a *rasika*, and soul from the perspective of the blues.

And so we return to this apperceptive faculty, which is implicit in all of the above. In every moment, it is oriented in some way: upon some unfolding activity. Whatever it is oriented upon, and thus participating in, will recurse in the dynamical

system: the underlying generative activity of said focus³³⁸. If nouning, then atomized and explicated; if verbing, then implicate³³⁹. Its focus is apperceptive, thus we must understand it as a simultaneity with all of life processes trans-temporally and trans-spatially. We must both understand it as such, and, through embodied process, reclaim all of our fragmented attentive processes, reuniting them as one whole: to become who we are. Intention, just like the conscious observer (n), is resultant of more fundamental processes – phenomenologically, if we look for its source, its first cause, we find rather a field of phenomena which can only be resolved by a reframing of intention as participant in unfolding process – and in terms of the continuum/flux, as we landed upon with identity. The ‘rudder’ is, in fact, in terms of human

³³⁸ As the apperceptive faculty includes the wholity of attention, this must be considered. For example, we might say that someone’s attention is ‘on a tree’. At which point the above would imply that, if you focus on a tree long enough, you would become a tree. The conscious purview of attention referred to here is only a small fragment of the wholity which apperception represents. Thus, simultaneously with observation of the tree, apperception may also include 1) the notion and construction of the self 2) sensations, feelings, and thoughts, and the entire sensori-motor engagement 3) the implicit atomized landscape of consciousness which is generally unconscious, as well as many other elements as one whole. Each of these elements are also unfolding process which these are merely signifiers for. The generative activity of this wholity is what will be recurred, not the atomization of tree as a noun.

³³⁹ This should be understood not to be a tirade against nouns; I use nouns as much as anyone else. It is a tirade against the nouning of the interior landscape and the continuum/flux, of taking them outside of the metaphorical context, ‘making them real’, and experiencing such as real.

unfoldment, more accurately the coherency apperception, of which the intention is merely another element of its larger unfoldment.

So the situation of the artist is one of being a complex dynamical system in infinite interactivity with other CDS', intrinsically embedded within the open system. Thus they can be an agent of coherencing of the implicate, or of a self-propagating closed system (either of themselves, or as a part of a larger closed system.) Inevitably this comprises a spectrum of expression, wherein noone is exclusively one or the other.

They may be part of a larger dynamical system (tradition, school, etc.) as a 'closed' system³⁴⁰ which is coherencing the implicate implicitly; but it will still exogenate the generative activities of its explications (and thus whatever

³⁴⁰The definition of 'closed system' becomes tenuous at this point. A closed system can be a participant in the activity of coherencing the implicate, just as a musical composition can be a participant in exogenating the implicate through explicate means. At this point, it is arguable that the system is more the implicate than the explicate; this relates to our inquiries into the self, as the actual answer is more a continuum than it is any lexical atom. In the end, the self is whatever generative activity it becomes aligned with in unfoldment: to one who truly believes in the conscious observer as a reified noun, that is their 'experienced real'. Similarly, if one experiences themselves as the open system, that is their 'experienced real'. And so it is with dynamical systems on a larger scale. This raises a tantalizing set of questions for inquiry: what are the analogues between an experienced self as implicate, explicate, human being, and natural system, respectively? The exploration of this represents infinite creative avenues. Once again, this is a topic that will have to fill another volume; we will let the question simply rest in the space of inquiry for now. As a sidenote, this particular set of questions, each taken individually, would produce an excellent sequence of unfoldment in employing the question-based implementation of the implicate methodology.

incoherencing this implies in relation to the implicate). The simple fact is that, without constructing a black and white dichotomy, we have created a distinction of activities which may be observed herein: bioresonant, mutagenic, implicate, etc. coherencing the open system, and mimetic, explicate, morphoteleological, etc. coherencing the closed system. And in so doing, the explicate perpetuates an intrinsic illusion which has a half-life, so to speak, at least if it believes in its ‘experienced real’: an illusion which is destined to return to the implicate; whether through historical process, compositional process, or any other process. And one which has very real implications processually.

Thus the implicate is the only activity which is truly sustainable, and is truly coherencing in the general case of the implicate order. To unpack this a little further: all explicate systems whose coherencing activity is by definition a particular case of coherencing, oriented around the coherencing of a closed system, will inevitably do so at the cost of the incoherencing of another system: this is the nature of dichotomizing the implicate³⁴¹. They are coherencing in relation to a limited frame: thus their particular case of coherencing will inevitably come into conflict with the general case of coherencing of the implicate, and they will invariably either 1) cause incoherencing in an explicate system which they are in contact with (as exogenation

³⁴¹ We referred to this process in Splitting the Atom, as integral to the way that atonality actually recurred the underlying geometries of tonality implicitly at the level of consciousness.

of the general case of coherencing through that system), or 2) dissipate into an activity of incoherencing themselves until their activity realigns with the general case of coherencing: until they abandon mimesis for bioresonance, in terms of the implicit generative underpinnings our processual analysis unveils. At which point they have, even if for only a moment, rejoined the implicate activity. All bolts from the blue, all strokes of genius, all sudden leaps in the human oeuvre: all are activities of the implicate, exogenated through the frames of the explicate (of historical recursion, artistic process, etc.): returns from two to not-two; many to not-many. Acts of exometaphrasi and exodiadosis as viewed from within the system, and synechtodiadosis as viewed from without it.

It would seem that humans always tend to seesaw between periods wherein the recursions of the explicate domain create a reified set of knowns, which then inevitably become unsustainable, and then ‘bolts of the implicate’ help to re-adjust the system (often only through moments of crisis). Thus the analysis of Thomas Kuhn's work holds true again, but still begs the question of: how long will we do this? Are humans capable of only this one processual unfoldment, or is there a processual transformation possible, a state transition shift in the very fundamentals of our dynamical activity as a species?

Unless there is a processual transformation, these recursions are indeed inevitable. Dynamical system study reveals this, as outlined throughout, as the generative activity underlying will always organize the system. The processes of exometaphrasi and exodiadosis will occur at isolated moments; the coherencing of the

implicate translated will inform a new set of knowns, a new school or style or methodology, or some other reified frame which is built around it: these will become the new *a priori* assumptions and processes inhabited, and thus the filters which limit the creative domain going forward. Inevitable dissipation will then create the conditions under which artists or other visionaries are motivated to overcome these filtrative recursions in their embodied processes', and seemingly "otherworldly" bolts from the blue will exogenate the implicate once again, through them. That there is an inherent co-dependency to this, wherein the 'genius', the 'expert', the 'authority' is 'hired' to 'save' the passive, the un-creative, the 'ignorant masses', should be implicit. That it recurses paradigmatic limitations which persist from authoritarian structures that were thought to have disappeared from the human domain, but which have rather shifted from overt outward expression into implicit inward expression (in terms of consciousness as the true modes of production of our world), should also be apparent.

The question is, are we ready to move into a new processual paradigm? One which leaves this pattern behind completely? On both ends of the unfoldment: are listeners ready to give up their passivity, wherein their consciousness (and their experience) is taken care of metaphorically by the authority/artist/genius? Wherein their experience is 'done' for/to them? And are we as artists ready to abandon our authority as genius/expert and the power which this commands in terms of a very real neural complicity inside of the listener's consciousness, for the midwifing of a larger activity? If we realize how much power we have, that we in fact do command the true

modes of production of our world, as much as we convince people to listen to us, or to shift the implicit attentional inquiry of their lives onto us, would we be willing to give this power up? And invite the listener to take response-ability for it themselves? In the emergent directions I have outlined throughout, many extraordinary individuals have in turn emerged who discovered the shift intrinsic to these questions inside themselves, exogenated it organically through their art, and in turn made it available for their listeners to discover inside themselves, and they are all to be lauded for the courage and generosity of spirit which this embodies, as they literally gave up control over consciousness as the true modes of production of our world. The re-autonimization of consciousness which has been wrongfully colonized by the implicit tyranny of the abstraction of authority is the highest endeavor to which art can aspire in the modern world, and these extraordinary individuals have placed their art in service of this, and not in service of their ego.

I believe firmly that it is possible, through embodied process, to come into intimate relationship with the direct experience. I believe further that this profoundly empowers one's understanding of music as a processual unfoldment in a dynamical rather than atomized frame of understanding. I have shared the metaphors of psychological and biological filtration as a praxis wherein this direct experience, and how it is transformed into a musical experience, may be apperceived, unveiled, and understood intellectually. I further believe that it is possible to drop our psychological conditioning, and allow the operation of psychology to be re-oriented by life processes, rather than life processes by it, and that the resultant unfoldment is the

avenue by which to reveal the intimacy of consciousness which liberates us from the tyranny of abstracted authority, whether exteriorally perceived, or ontologically perceived. It is the activity by which the complexity of the organism may be reoriented upon a truly sustainable basis.

I believe that the reorientation of the coherency apperception occurs naturally as we reclaim the fragmentation of attention and thus mind into the wholity which apperception represents. This wholity is inseparable from engagement with the continuum/flux. The reorientation of the coherency apperception further represents a phenomenological movement in the geometries of the coherencing activity which satisfy Husserl's *epoché*, and the historical transformations he envisioned, and which further transform explicate process into implicate process, if one is willing to allow phenomenon to be 'as they are' rigorously enough to dismiss the momentum of nourning the universe as it attempts to distract one from this enterprise. If this is done, the entire apparatus which has built the prison of complicity will fall from the inside; simultaneously, the continuum/flux which it has kept at bay will come rushing into the space it previously inhabited.

I believe further that intimacy with the direct experience is, in the realm of empirical and existential inquiry, directly correlative to intimacy with the implicate in the realm of phenomenological and musical inquiry. I believe that emergent streams have already broken this ground, and that I am merely re-articulating it in new light in order to create a deeper field of revelation in this text. I believe that human beings can become instruments of synechodiadosis: of an activity of unbroken coherencing

dissemination, from the implicate to musicking (as well as through all other avenues of human expression and life processes); that through awareness of morphoteleosis, and mutagenesis; the explicate, and the implicate; mimesis, and bioresonance, and the implications of their recursions (implicitly through embodied process) we can disentangle from this apparent entanglement and enact a processual transformation which will leave the historical recursions Kuhn described solely in the realm of history. We will, quite simply, inevitably experience a state transition shift in the dynamical system of culture which will transform us as a species into the instrument of the implicate, and the music she has been waiting to play through us. This will occur the moment our attentional activity in regards to the implicate whole becomes greater than our attentional activity in regards to explicate processes. Tools (explicate processes) are to be used, and then laid down when they have served their purpose, not inhabited as a viable ecosystem for human existence. The decimation of the exterior ecosystem is in direct correlation to the degree to which we have artifacted the complexity of our tools upon her, in pursuit of a complexity absolute which is a psychological fiction. This is in direct contradistinction to the domain of complexity absolutes which exist in the geometries of the implicate, which are implicit, and which are real.

I believe all of these both because 1) I have observed the isomorphic seeds of their activity unfolding in my own bioresonant laboratory of direct experience (wherein the ‘historical recursions’ of my upbringing, as well as of the teleomorphic impulse within my own field in any given moment, have given way to the implicate

activity), and 2) because I know that pattern isomorphism throughout all levels of nature, consciousness, and life, is reality in its manner of operation: this is a scientific fact. What appears to be inevitable (in terms of historical recursions) is a product of the social complicities of a constructed stage. What is actually inevitable is a product of the coherencing activity of the implicate, and the geometries therein. I can trust my own experience to be what it is: if we have all engaged the attentional exercises together rigorously, we will have observed the microcosmic unfoldment of the same generative activity I am describing on the historical stage on our interior stage, and the possibility of humanity becoming the instrument of the implicate activity should be self-evident; and not an abstracted stretch of the imagination: that humanity may break the historical recursions outlined by Kuhn, just as an individual may break mimesis and become a bioresonant instrument of creativity, in the macro span of their life, as well as in the micro span of an attentional inquiry³⁴².

³⁴²Some people will believe that it is possible to access the direct experience, to drop our psychological filters, to reorient our generative activity, etc. and some will not. My job is not to change this. My job is to invite people to explore it, and let the unfoldment that ensues answer the question.

Some will believe that synechodiadosis is a reality underneath the surface, even a human possibility outwardly; others will not. Some will believe we are 'destined' to mimetic recursion. I believe in my own methodological approach enough to allow these activities to be, as well, and let the unfoldment continue: my intention has never been to be 'right', or to fight for 'my conclusion'; to ostensibly 'push against' the 'opposition'. I believe this form of dialogic approach is an outmoded vestige of the same generative activity I am seeking to retire through simple attentional observation, and not agitation. And in this dialectical and processual

Thus the apperceptive coherency faculty is itself the activity of our true intelligence, an intrinsic intelligence, the general rather than the particular case, when it is coherencing coherencing itself, and not mimesis. When it is apperceiving apperception, and not reiterating the fragmented mind. When it is listening to the listening. It is our aperture unto the implicate: the point of contact in consciousness which Bohm described, wherein the abstracted theatre gives way to the continuum/flux.

If not arrested in its activity, it is naturally the coherencing of such: a self-organizing activity. If vibration and consciousness are not separate, then this must be so; both from the intellectual observation that systems do not operate independently, but rather interpenetrate infinitely, and generatively arise from the open system as a shared source, as well as from the empirical observation that it is impossible to find a

frame, I must metaphorically convince it to retire of its own 'free will', which may highlight the hyperbole, as well as the poetry, intrinsic.

One implication of the movement towards an integrated empirical/intellectual methodology (as Varela and myself advocate) is the understanding of different rules of engagement; the mature intellectual actor in the 21st century no longer gauges their success (solely) by how many people agree with them; instead they judge their success (primarily) by how deeply their work unveils the geometries of the implicate: by the coherencing activity which it exogenates. Change comes from within. The exogenation of the deepest enfolded order of organization it is possible for us to discover is the best way we can 'change' anything in this world; in this, the self-organization of the organism, and of the dynamical system it finds itself embedded within, changes itself, as it will self-organize upon the praxis of this enfolded order of organization. In this text, I have laboriously attempted to discover what this looks like (for me) and to realize it in an idiosyncratic fashion appropriate to this text.

place where one begins, and the other ends (vibration and consciousness). I invite us all to rigorously inquire into precisely where this line which is supposed to exist between vibration and consciousness is. Certainly my skin represents an element of the stable form called *homo sapien* which keeps blood and tissue from falling out; however, I have looked empirically for the line between vibration and consciousness, and I do not believe it exists. I have looked empirically, with rigorous attention, and with a decidedly rational approach, and experience has been found to be 100% vibration (as an unbroken resultant of vibratory processes), and 100% consciousness (self-evidently) simultaneously. The only resolution is in the movement from two, to not-two – they merely represent differing purviews upon the same phenomenon, and the implications of this literally change our entire world.

As long as the conscious observer appears to be acting of its own accord, independent of the open system, one is in denial of the generative activity which animates that apparently closed system, the metaphorical 5%; they consequently will wander down morphoteleological cul-de-sacs, blindly circling in self-same recursion until this subliminal delusion has been confronted and corrected. Thus the ultimate form of authoritarian tyranny is to keep us blinded to this reality: through the distractions of media, pop culture, bad food, and the entire ‘menu’ which we are offered as the fiction of ‘freedom’ to keep us from realizing true freedom, which lies in infinitude. We are offered a limited menu of options to ‘choose’ from, and asked to call that freedom; all the while this activity veils an implicit infinitude which is our birthright and very nature, and which cannot be commoditized. We are asked to

recurse and reaffirm the ‘reality’ and ‘satisfaction’ of a 5% which is a poverty when compared to our true nature – far beyond 100%, existing rather in the immeasurable expanse of the implicate.

Once the intelligence of the implicate becomes fully alive inside of the dynamical system called a human being, the conscious observer ceases to be a tool of the explicate and the self-same attractor; rather it becomes an instrument of the implicate, of its coherencing activity, and it ceases to be the vanity of anything else. Explicate processes and competencies, as well, become the instrument of such. Attention, no longer fragmented, includes the whole activity of the dynamical system; from this wholity, it becomes the most sensitive instrument it can possibly be in apperceiving the coherencing of the open system, exogenating expressions of this activity, and concomitantly unfolding in synchrony with it. It has become a master musician: the implicate instrument has been tuned; the cognitive inversion has occurred. The creative potential of a human being has been realized: not a noun, but a great activity whose bellows stoke the synechtodiadotic flame of coherencing through the vacuum dynamics of its own conscious lucidity³⁴³.

This, I believe, is evidenced by the brain synchronies exhibited by Buddhist monks, as well as skilled musicians. I believe it is further illustrated by the nature of synchrony itself: of synchronous patterns at all levels of nature, which tend to

³⁴³ And once again, lucidity in the form which Oliveros’ work points towards, not lucidity in the terms of the forms of engagement embodied by the atomized frame.

exponentially amplify coherencing. These are vibrationally participating with the activity of nature, coherencing in collaboration with her, rather than in contradistinction to her. And it is humans greatest privilege to discover said synchronies not just in the patterns which have come before them: but even more profoundly, to be given the opportunity to, via their coherency apperception, discover enfolded in the activity of the implicate whole patterns of synchrony hitherto unknown, to become nature in her manner of operation paradoxically by discovering and exogenating new possibilities of coherencing which she relies upon us as her instrument to realize, and which would not exist otherwise³⁴⁴.

Which were previously enfolded potentiality. And then we get to disseminate that, through our exometaphrasi, and facilitate the apperception of such by as many people as possible. They in turn become a part of that pattern, that stream of coherencing which our radio has ‘tuned into’, through their implicit (and explicit, in terms of musicks which have decimated the passive listener paradigm) participation with it at the level of consciousness, and the world is literally transformed in this. New listening, new compositional methods, and the future of musicking, may thus be said to be exponentially increasing orders of vacuum dynamics in the ways and means of musicking which organically ignite and sustain the flame of coherencing within all human beings, and within life itself, unto the further self-organization of

³⁴⁴ For without us, these new geometries of coherencing would never be exogenated in the local frame of planet earth.

the dynamical system as a larger entity: the implicate whole. The equating of new listening with vacuum dynamics may further be inter-linked with Pauline Oliveros' agreement with me that Deep Listening is what occurs when the conscious 'doer' gets out of the way (footnote on p. 191), as well as with the exponential increase in brain activity which occurs during the resting state. In other words, synchronies in dynamical systems result not from our conscious intervention as human beings: but rather from the geometries of the implicate, and the idiosyncratic way in which we become the space in which they occur: the vacuum dynamics of consciousness.

I'd like for all of us to take a moment now and review our experiences with the attentional inquiries as they unfolded throughout the time we spent with this text: how they unfolded within our own bioresonant laboratory of direct experience idiosyncratically. When one observes lucidly the activity unfolding in the system as these attentional exercises are enacted, when one observes this with sincerity and rigor, certain streams of activity become readily apparent. The contrasts and similitudes between these activities bring the entire intellection/empiricism conversation, as well as this text, full circle.

First, when one reviews these experiences, one will note certain streams of activity which arose organically, of their own accord: which were not instigated generatively within the organism by an actor, an intention, or a stream of thought. Which rather emerged from the intrinsic activity of the organism, either as a resultant of, or in concert with the dynamism of the attentional activity being engaged, and

thus were **experienced** as an intrinsic activity of the field **emerging through** said process. Something which occurred, and which was not ‘done’.

This is often reported from within the dynamical system as ‘spaciousness’, ‘relaxation’, ‘stillness’, ‘content-less’, or any other qualitative metaphor (or signifier) along these lines. Everyone’s experience is idiosyncratically unique, a resultant of the particulars of that dynamical systems’ activity, so it may take a little bit of personal observation and inquiry into the unfoldment of one’s experience with the attentional inquiries to uncover precisely how these generative streams have unfolded uniquely in your particular bioresonant laboratory.

At the deepest moments of attentional inquiries, and of Deep Listening, as well as of music listening, this activity will be observed to emerge naturally, of its own accord. In the concert hall, at the most sublime moment; we sigh in an ecstasy of musical synchrony as the implicate activity emerges through us. We sigh in relief, as we get what we came to the concert hall for.

This activity may also emerge in any life process: while we garden, when we read a book, when we practice Tai Chi, or even while we practice math (for some blessed souls). It is the self-organization of the organism emerging through the atomized landscape of the normative perceptual world, facilitated by musical and attentional means in the case of the analysis herein: it is simultaneously a synchrony spike and a state transition shift, being observed from within said organism, and reported through descriptive metaphors. For some people, it will be experienced as a

meditative ‘state’ in their state space, or as a ‘spiritual experience’. The descriptive metaphors will themselves be found to be infinite in their diversity.

Second, one may observe activity which is decidedly instigated from an atom in consciousness as a generative foundation, if one tracks it back to its source rigorously³⁴⁵. At a subtle level of expression, a prior form is recursing upon itself, and this produces an exterior activity which becomes interposed upon the field of consciousness, as well as upon the unfoldment of the attentional activity; it may often be reported from within the dynamical system as experiences of ‘distraction’, as muscular tension or other forms of tension (such as irritation), or as the interposition of a particular thought stream upon the process engaged in: “what am I going to eat tonight?”, “I don’t know if I can sit still this long”, “did she really mean that?”, “what does this have to do with music?”. In general, these act as obfuscations to the unfoldment of the continuum/flux, which is intrinsic. They can also often be observed to be directed towards particular arrival points; goals which these isomorphic atoms are directed towards, and which they tend to reiterate in consciousness.

³⁴⁵ This would involve, when one notices a distraction, or a muscular contraction, during the attentional exercises, taking the opportunity to observe it passively, as a phenomenon, without getting involved with it. If one does this rigorously, and with absolutely no sense of ‘experienced real’ ascribed to it, then 1) the ephemerality of the phenomenon will reveal itself, and 2) its generative underpinnings will reveal themselves in an expanded temporal frame, and 3) the ephemerality of all of these phenomena, apperceived, will disintegrate the ‘experienced real’ quality previously ascribed to them.

This is the explicate activity. When it is followed, it arrests the implicate activity. If one were to then suppress it (in an attempt to ‘put an end to’ the explicate activity), this very suppression would be a reiteration of it. As we know, at the subtle level of dynamical systems’ generative processes, what is reiterated recurses in the system. Thus the instructions have been to notice the distraction, allow it to be (and in enacting this activity, it is what becomes recurred; the explicate activity becomes included in the larger implicate process, as well as the implicate whole from which it arose, and **the generative activity of the implicate is what becomes recurred, instead.** Like the ‘intrepid composer’, ‘pushing against’ an undesired activity was not observed to liberate one from it: only the enactment of a new generative activity caused the system to reorient. The way out is the way in.), and attention is then returned to the exercise. If these instructions are followed rigorously, the implicate activity will be observed to emerge organically, as morphoteleologically linear process has been abandoned for process in alignment with the inter-nested nature of reality. Thus, in the context of the vibratory isomorphism theory, synchrony has been facilitated.

We must all in our embodied process, whatever that is, and whatever that means for us³⁴⁶, endeavor to amplify our awareness of the generative spectrum which

³⁴⁶ For a musicologist, their embodied process may include the way they pull their head up from reading every two hours, and make a cup of tea. It may include the way they sit in the concert hall while they listen, as well as the way they contextualize the

these two activities outline. For it is upon this spectrum that our generative activity is sourced, and our musical outputs generated. In the contrasts between these two generative activities, we discover an invaluable lens into the activity of the dynamical system, from within the system, which potentiates the alignment of our musicking into the domain of expanded state transition shifts, and coherency absolutes, in the implicate order. When joined with the intellectual inquiry of this text (thus forming one gesture – not-two), the arguments of this processual unfoldment will be found to be self-evident, and integrated effortlessly with the already operating activity of our art. In this laboratory, we create a forum for unveiling the implicate activity – so that our explicate activities may become reoriented in praxis to it. So that our tools may be handed over to it.

It may appear at first difficult to distinguish between these two streams of activity, which are very real phenomenon at the level of dynamical systems, but which have become interposed by the inter-nested orders of filtration intrinsic to human psychology and experience for a very long time. For some, it will take a

experience they had in their body afterwards. It may even include the way they ignore the body as being relevant in analysis; for even this occurs in a body. For a composer, their embodied process may include a book of phrases they keep which intrigue them, and inspire new compositional avenues; it may include late nights and the phenomenon of neurological exhaustion. It may include singing their phrases while they hike through the woods, as a form of biofeedback and natural inquiry. For an improviser, it may include wearing a pair of ‘lucky socks’ every time they play; they don’t know why it works, it just works. There are infinite embodied processes: in the end, the ones which work are the right ones, and we always ascertain this in the field of bioresonant feedback: through implicit bioresonance.

certain amount of initial rigor to ‘clear the path’. As reinforced throughout, this is entirely an ‘inside job’. With patience, a processual unfoldment of disentanglement, and a willingness to transform previously *a priori* assumptions and processes into dedicated objects of conscious inquiry, the process will be inevitably fruitful.

These generative contrasts will inexorably become apparent in a laboratory wherein the attentional exercises are unfolded with rigor, as the exercises have been carefully designed to unfold the layers of obfuscation to their direct observation via a processual unfoldment of the implicate instrument which is multi-dimensional and inter-nested in isomorphic resonance with the processes it unfolds. They are designed to as efficiently as possible peel back these layers and reveal the processual unfoldment underlying. Simple instructions in fact facilitate the coherency absolutes we are looking for in terms of complexity at the level of unfoldment found within the continuum/flux – especially when we are talking about instructions unfolded within the praxis of the implicate principle. To the degree that these instructions are isomorphic mirrors of the fractal nature of the implicate principle, their simplicity as a lexical or syntactical atom will have no relationship to their complexity in fractal unfoldment.

Quite simply, the implicate laboratory facilitates our observation of phenomenon we otherwise would not be privy to. Once we enter into it, we enter into a whole new domain of interactivity. The implicate is what occurs: the explicate is what we do. As the enfolded layers of this process unfold, what occurs appears to be what we do, and what we do appears to be what occurs, over and over again, as inter-

nested orders become peeled away from our conscious purview; as previously enfolded orders become unfolded, until a deeper awareness emerges organically from the iterations of this processual unfoldment. In the praxis of radical self-disclosure and sincerity, there is no limit to this.

The implicate is intrinsically the domain of higher orders of complexity, by definition: it is the domain of enfolded orders. These orders are enfolded in the field, holographically: they are not in some 'other place'. Only the human ego wishes to impose the artifice of anything otherwise: that, for example, the explications of its own machination represent higher orders of complexity and organization; or, that these enfolded orders would be found in some 'other place'. These two views are concomitant to the two which we resolved into not-two on p. 69-70.

Hence the apparent 'surprise', or 'novelty' in many pieces of music which exogenate the implicate: the explicated frames they inhabit intrinsically create the context and forum for strong contrasts with veiled *a priori* assumptions and processes in the larger built perceptual universe of the cultural context to arise. The surprise is merely to the ego: habituated to inhabit the small walls of that prison, and believe that nothing exists outside of them; all of a sudden a light breaks through what appeared to be a solid wall. 'Novelty' is just an experience integrally related to the known and the unknown as a dichotomous processual unfoldment within this built perceptual universe; to the degree to which we consider the unknown to contain a domain of 'the impossible', novelty will arise as an experience. To certain navigators of this terrain, these dichotomies have ceased to exist: not because one has 'transcended' them, but

rather because the immanence of uncertainty, and our apperceptive faculty, renders any notion of the 'known' in an atomized sense a *reducto absurdum*; wherein one person may experience a small slice of 'reality' as 'noveltous', another may just as readily experience all phenomenon as noveltous.

And they would be 'right': the literal immanence of uncertainty reveals that the second individual is more in alignment with what is, and the natural unfoldment of life processes, than the first. In order to distinguish between the two dynamically, we have to label the first a particular case of novelty, and the second the general case, just as we began to label coherencing in the particular and general cases. This helps us to orient within a dynamical unfoldment more precisely.

I am holding a collage in one hand; in the other, assorted items I am transporting from an automobile into a house. On the ground, upside down, is a small, roughly cut piece of paper, in a shape similar enough to one which might be cut by the artifice of a 'collaging hand' that I secretly wonder if it is a piece of my collage which fell to the ground. I reach for it; it is not: it is merely a random piece of paper - the delight of the moment when the phenomenon undergoes a state transition shift from being oriented ontologically in relation to my collage, to being a phenomenon in and of itself, titillates through me as I realize this, and is reward enough for bending down to look closer.

The power of gestural listening (p. 437) is in how near it is to the processes of coherency apperception. As we exercise this form of listening, it acts as a bridge

between us and the coherency apperception, a usually hidden process which this text illustrates the integral value of discovering more consciously, as it is the praxis of generative unfoldment in the human being. In its processual unfoldment, it intrinsically reveals our own hidden generative activities; revealing the gesture that is, as opposed to the gesture which appears to be.

In observing this gestural unfoldment within myself, and exercising gestural listening (both while listening to music, as well as while I compose or play music), I observe that the subtle processes of coherency apperception, when exposed, are often (even in someone who has exercised a considerable amount of pedagogical listening), if one is being honest with themselves, seeking to achieve a certain end at a subtle level of consciousness: seeking to pattern match mimetically a certain matrix of ‘beauty’³⁴⁷ which is akin to a conceptual object located in the subtler geometries of consciousness and neurobiology: an atom (located in the apperceptive coherency matrices, as we have visualized them herein) which is then pursued as a mimetic recursion in and of itself.

I have also observed how this same faculty, when made ‘quiescent’ through implicate processes, becomes more predilected towards 1) delight in whatever patterns arises, and 2) experiencing an amplified synchrony spike in response to the discovery of patterns which the mimetic pattern recognition would have normatively

³⁴⁷ Or ‘rightness’, or ‘appropriateness’, or ‘rigor’, or ‘harmony’, or ‘order’, or any number of qualitative metaphors which point to the underlying generative activity.

filtered out, and 3) the capacity to recognize complex variations of amplified synchrony which occur within the field of these patterns alluded to in #1, and thus a discernment between both particular and general novelty, as well as particular and general coherencing, as well as the idiosyncratic particulars of a coherencing activity which the instrument produces a synchrony spike in response to, and which the artist then pursues.

I believe this further unveils more deeply what the phenomenon of a particular case of novelty points towards: the value lies not in the novelty itself, but in that it points towards the general case of novelty, which is intrinsically inter-linked with the indeterminate nature of the universe, and the existential miasma most humans find themselves living within. It also points to an intrinsic (rather than artifacted) value in the act of discovery itself, and the state transition shift which this represents (and which may be observed in the coherency apperception as noted above). The direct observation of such state transition shifts, as/when they occur, is one of the shimmering jewels which can emerge from a sincere and rigorous embodied inquiry as outlined in herein. I argue that all great music has been an exogenation of this, as it represents the terrain wherein the bioresonant emerges from the mimetic, and wherein the historical recursions of an atomized landscape are shattered, and the implicate comes shining through.

In my observations of the experience of silence vs. the experience of internal stillness empirically (p. 359), a profound and important significance is found in observing the divergent expressions of the system within the organism directly,

therefore clarifying the territory which has been interposed upon it by psychology. As I exercise this attentional unfoldment, it amplifies the runnels and chreodes which are a revelation of the hyperbolic edges of the built perceptual universe, rather than a reiteration of them, and this liberates me from further recursion in these cul-de-sacs.

Silence is an experience generally considered to be ‘real’; observing it through the modus of the phenomenological reduction allows us to observe a resultant of the dynamical system of experience construction in the form of a biological filter rather intimately, and directly; a complete turnaround from inhabiting it implicitly. Silence inhabits a domain of biological filtration which is further interpolated by a specific structuring: creating this experience of ‘silence’, taken to be ‘real’ within the built perceptual universe we inhabit, it is both biologically functional and simultaneously inhibitive to the inquiry of the creative musician, as it will intrinsically veil geometries of the implicate which would otherwise be apperceived. For most humans, there is no reason to inquire beyond the limits of the biological filters, and the functional purpose these serve as tools of self-equilibration. For an artist, however, it is inevitably a terrain of fruitful inquiry, for the reason mentioned above. In terms of the statistical complicities of the larger culture, most casual observers, if asked if silence were ‘real’, would not hesitate to say yes.

In contrast, internal stillness points empirically to an activity I argue is an experience of the actual coherencing activity of the organism – it is thus an actual internal vibratory unfoldment which is being observed, and then mediated into an experience; it is not a fiction as silence is. Both are experiences; one is an experience

rooted in self-equilibrating pragmatic processes, the other is an experience rooted in the actual unfolding coherencing activity of the dynamism of the organism. Internal stillness is a phenomenon which most people, if queried as to its ‘reality’, would say no to: they might even dismiss it as a ‘metaphysical experience’³⁴⁸. Thus this territory unveils some of the most *a priori* processes of our empirical exogenation of the pre-conceived pattern: morphoteleosis, and the atomization of the built perceptual universe, which I have named herein.

Many tire of hearing the argument that the feminine, the body, etc. have been habitually discarded, but the argument remains critical, as the sort of inhabited hyperbole outlined in the discussion above is the resultant of their continued suppression. Hyperbole playfully discussed reveals new lines of inquiry; hyperbole

³⁴⁸ Dovetailing with our earlier discussion of the woes of discarding this terrain (of particular geometries of the implicate which are experienced as expanded synchrony) merely because it has become associated with the atomizations of dead authority structures (thereby keeping said authority structures alive and recursing implicitly in consciousness, as discussed earlier.).

We may imagine a man sitting in a concert hall experiencing a piece of music. His coherencing activity enters a particular domain of dynamical expression which may only be described as deliciously heightened synchrony. As he exits the theatre, two doors present themselves. One leads to 15th century Spain, where he is informed that his experience legally constitutes a mystical state, and that he is thus considered a ‘pagan’, and subsequently scheduled to be burned alive, as only the catholic church may mediate spiritual experiences, not the empirical faculty (this is analogous to the stance of the self-same attractor, which wishes to monopolize the mediation of consciousness as the modes of production.). The second door leads to our future, where no stigma has been placed upon this experience, and the coherencing activity intrinsic to it is thus allowed to recurse, ferment, and unfold further as increasing coherencies in the dynamical system emerge.

inhabited produces insanity. Only a disembodied actor can perpetuate an institutionalized illusion with such *facile* – thus the very ‘tiring of hearing the argument’ is a product of the inborn programming to deny and suppress the processual and cognitive turnaround which would lead to the re-embrace of the body; which would cause the entire inhabited built perceptual universe to crumble and return to the continuum/flux which the body is inherently a part of.

At least as an atomized object this universe will inevitably crumble: as alluded to throughout, once it has disappeared as an atomized landscape, the built perceptual universe may then be re-inhabited as a dynamical phenomenon, as a tool of implicate intelligence, a bioresonant laboratory of direct experience which is an infinite window into the multi-dimensionality of the universe. It thus no longer poses a problem.

The contrasts between the experiences of silence and internal stillness provide a poignant nexus of empirical inquiry, and thus observation of dynamical system expression in the implicate instrument: the one which exogenates the music of sanity. A contrast between ‘taken as real’ and fictionalized for functional adaptation within an experiential norm (silence), and ‘generally discarded’ but praxis of actual and real phenomenon of coherencing (internal stillness) helps to clarify the unfoldment of implicate inquiry returned to over and over again in this text. As we processually unfold this exercise, new runnels and chreodes are cut inside of us which render the old mimetic ones irrelevant, and our own personal transformation towards the cessation of intrinsic mimesis unfolds.

An excellent way to investigate this territory empirically is to explore playing music ‘from the silence’, and then explore playing music ‘from the internal stillness’. Without too much commentary (in order to let the unfoldment be primary), one will note that our culture has generally advocated the perception of sound as ‘emerging from silence’ as scientifically true (despite the fact that phenomenologically it is ridiculous, and illustration of everything discussed in this chapter).

If every participant in musicking has a MNS which is instantaneously apperceiving every permutation of possible unfoldment in the system trans-temporally and trans-spatially, then it is ostensibly a shared participation in the answering of the question: ‘what happens when we follow this path in the field of coherencing possibilities (which the musical unfoldment represents), together? When we pick this stone up from the proverbial beach, together?’ And the answer to this question is the unfoldment itself, not abstractions of it.

It represents a fundamental state transition shift in the system of musicking when the overall paradigm shifts from composer (or conscious observer [n]) ‘selecting’ or ‘choosing’ the stone and presenting it to the audience via performer to composer ‘selecting’ a stone **which is a process that results** in the ‘selection’ of a stone to present to audience (via various modes of process and indeterminacy) to facilitator (or conscious observer [v]) **facilitating** the selection of a stone which is a process which facilitates listener, performer, and entire dynamical system **discovering** a stone as one implicate organism, together.

Clearly each exogenates generative qualities which inhabit different state transition zones in dynamical unfoldment. However, the last is unique in that is most nearly aligned with what is actually occurring in the system. It is thus the most honest. And, as mentioned before, one of my goals in this text has been to simply become honest. The principle of ‘listener as composer’ highlights this further: no matter what our musical process, the reverse translation of the listener will be the last step in the generative signal chain: wherein enfoldment emerges as unfoldment, and is then ‘re-enfolded back into the listener’³⁴⁹. No matter what we intend a compositional output to be, it may be something very different contingent upon the consciousness of the listener, which independently discovers the coherencing activity within their own bioresonant laboratory of direct experience, as the final step in this process.

Thus, seemingly paradoxically, we actually approach more ‘control’³⁵⁰ over this resultant as we approach what I dub the third indeterminacy: listener

³⁴⁹ Thus it is linear in terms of the translation/reverse-translation analytical model; however, it must be reiterated that at a subtle level of process this is trans-temporal, and thus this metaphor breaks down. As mentioned before, hyperbole makes for good discussion, and its exploration may limit the degree to which we inhabit it in the future (I am referring to the hyperbole here that music is a trans-temporal, trans-spatial, non-linear process which can also be meaningfully analyzed in an analytical frame wherein the listeners experience is the last step in the signal chain.)

³⁵⁰ Control being a troubling term within this territory; from the illusion of control within a built perceptual universe we discover our influence and approach a level of ‘control’ which is aligned with a more honest assessment of the existential and

indeterminacy. This level of indeterminacy **is in fact the most fundamental field of indeterminacy within which all musicking unfolds**. It is further evidence of the animistic interposition of the conscious observer (n) upon the continuum/flux that we have dealt almost primarily with performer and composer indeterminacy up to this point historically; at one level, we have admitted our lack of control, but simultaneously, paradoxically, and subliminally, we wish to retain control over this lack of control, in *a priori* ways which are still veiled from our conscious purview. The inculcation of the third indeterminacy represents one of the most important phenomena in modern music. The deeper one enters into this indeterminate field musically, the deeper the synchrony absolutes which emerge from the exponentiated feedback loops and concomitant complexity of the organism therein as the singular mystery of consciousness is approached more intimately.

It should be no surprise that such blatant hyperbole exists as that between perceived forms of complexity, and actual complexity as it unfolds in the continuum/flux, as well as that wherein the composer approaches ‘control’ more nearly as they apprehend the inherent uncertainty of life processes, and convince the 5% to give way to the 100%. From there, they convince it to give way to the 100% which expands beyond the limited domain of their body – the implicate whole.

phenomenal situation at hand. Whether we call it control, or influence, or facilitation is open to debate, and represents another dialectical challenge to the norms of modern languaging.

Our investigation is rife with hyperbole that, like the experience of silence/internal stillness, hyperabstraction/abstraction, quantum entanglement/disentanglement, etc. self-revelate the dynamical territory we are exploring: that of actual inter-nested unfoldment which we are embedded within. The geometries of the implicate, and the complexity absolutes which emerge from that.

As alluded to earlier, we can make a temporal histogram of the compositional process wherein nodes of analysis represent coherency spikes which the composer has oriented to at that particular moment in the processual unfoldment. We can extend this into a similar temporal histogram of the performative process, as well as the listener's process.

We can go a little deeper and note phenomena of moving towards certain coherencing patterns, away from others (endemic of a preference based paradigm), seeking after various coherency patterns that are known, discovering various coherencing patterns that are unknown (embodying the contrast between mimetic and mutagenic or bioresonant creativity), and the praxis of relationship between the ACM's and the conscious observer (a) that these reveal, wherein state transition shifts between paradigms of preferencing (and preference mimesis) and mutagenesis begin to further emerge from these two into not-two.

We can go even deeper and zoom in upon one of these temporal slices; one single coherency spike, a moment where the composer 'decides' that they have really discovered a coherencing pattern they wish to exogenate. As we zoom in upon this coherency spike as a singularity in systemic expression, it becomes apparent that

what is actually occurring is a state transition shift in the self-organization of the dynamical system, one which the system subsequently orients to and participates in recurring in the form of a musical composition. It is akin to the state transition shifts observed to occur on cymatics plates, in that they are discreet in appearance, but behind the scenes resultant of an enormous activity.

The conscious observer (a) has been conditioned to atomize this as a ‘choice’ made by a conscious observer (n) that a dynamical systems analysis (as well as a neurobiological one) reveals to be not what it appears to be. It is merely an atomization of the unfoldment of the continuum/flux which the emergence of a state transition shift, and a new order of organization previously enfolded in the field, represents more scientifically. It is more accurate to say that the composer discovered a new coherencing potential via the apparatus of their coherency apperception, then to say that they ‘chose’ it through some further atomization of the ‘expert status’ of their idiosyncratic preferencing unfoldment.

And to go even deeper, it is more accurate to say that out of the larger attentional unfoldment of the conscious observer (a) we are calling ‘composer’, the organism oriented towards emergent coherencing potentials which were previously enfolded in the field - a process which the metaphor of the ACM’s seeks to provide a framework for discussing without becoming a new atomization itself - and wherein any discussion of choice, conscious observer, etc. is merely psychological interposition upon the continuum/flux.

Further, the only way to elucidate the activity of the state transition shifts of the dynamical system which the ACM's point towards is to observe them directly, as this particular phenomenon is so near to the implicate principle, and the third indeterminacy (as well as the singularity of complexity these represent), that to even begin making a histogram of it and explicating it as a dynamical system in any other frame than metaphorically is to hyperbolize the intrinsic understanding of its operation, and its complexity, which is framing not just musicking, but also the histogrammatical explication, as well as the lexical reverse translation of these words, as well as the moment to moment construction of the built perceptual universe which all of this unfolds within.

Thus the pre-emptive emphasis that musicking is an 'inside job', that sincerity is the praxis of success in this inquiry, and that self-disclosure is our number one impediment/catalyst to progress. These were not platitudes. The experience of an individual shared is the report of the dynamical system, from within the dynamical system, interpolated through all of the lexical and empirical constructive processes alluded to above. It reveals precisely the activity of the system because it includes the gap, or lack thereof, between self-disclosure, and 'what is'.

Yes, the artist is discovering coherencing unfolding within - but not within the self-made walls of the ego, the self-same attractor, the built perceptual universe. They are discovering it within the continuum/flux of the quantum universe – within the geometries of the implicate – using the built perceptual universe as a dynamical tool,

as well as the body as the bioresonant core of that phenomenon³⁵¹. Thus the perceptual experience of returning to the continuum/flux and its significant value (as Oliveros has emphasized it): it is the purview of a conscious observer (n) as it returns from whence it came, metaphorically from lost in the urban jungle of its own machinations, to found in the infinite diversity of the rainforest of implicit creativity.

The respect that we have for the avante-garde is that, as artists, we know the rigor it takes in the embodied process to steer one's ship out of the known (and the complicit) and discover these coherencing potentials in the uncharted waters of the infinitude implicit. It demands an embodied process disentangled from assumptions of tradition: the *a priori* landscape which masquerades as *a posteriori*, and which acts as a comfortable anchor upon which to lay one's faith to the less arduous inquirer. There are no comfortable patterns to fall back on for the sincere - there is only coherency apperception as a rudder. The avante-garde is not about the new form; it is about the leading edge of our shared embodied process, new coherencing potentials,

³⁵¹ One may imagine the field of the implicate as an ocean, and the built perceptual universe as a submersible. In the dynamical mode, it travels, discovering new geometries in the implicate as it goes. In the atomized mode, it remains in one place, and even pretends there is no more ocean 'out there' beyond the limits of what it can observe. It thus recurses a limited set of the geometries of the implicate, in sharp contrast to its potentiality. The ACM's are the navigation system: one may extend the metaphor further and say that the mimetic submersible has no windows, and is guided entirely by pre-programmed computer navigation, whereas the bioresonant submersible is made entirely of glass, and that the observer within thus has a 360 degree purview of the geometries of the implicate as they explore the ocean.

and the forms which emerge naturally out of those state transition shifts. The artist is the captain of the ship which travels the waters untread – and brings back the treasure never before seen or heard. The treasure of coherencing.

This ship is their embodied process; over centuries the captain has evolved from autonomous leader as hierophant to leader as facilitator, mirroring the evolution of the species, and its consciousness. Always the explorer seeking uncharted waters, the avante-garde is the leading edge across apparent divides of the canonical, the experimental, the aboriginal, and every other exclusionary definition artifacted. Even the self-same attractor as it is found expressed within the ‘avante-garde’ as traditionally framed is antithetical to its actual operation.

The goal is no longer to be beautiful: for all has been found to be intrinsically beautiful. The goal now is to apperceive in our embodied instrument the coherencing and synchrony potentials (and the state transition shifts intrinsic to these) which are the most radical possibilities for our organism, and our species, and to become the instrument of these, by whatever means necessary. Thus, it goes way beyond ‘beauty’, or any other qualitative descriptor – which can only point to these activities.

Imagine a closed system with multiple agents in it; their interactivity comprises the total activity of the system. The agents are primarily mimetic in activity; in their closed system there has grown an imbalance in relation to the open system which it unfolds within. Because the agents are primarily mimetic in generative activity, they lack the necessary feedback to correct the imbalance: new solutioning which would facilitate this correction exists in the domain of the

geometries of the implicate which are outside of the coherencing domain their recursive mimetic processes currently circle in.

Along comes an agent called 'the artist'. Driven by a compelling desire to dive into the unknown, and exogenate works of art through new languaging and new forms, and possibly an intuition of the above, they do not necessarily think consciously about 'coherencing the system', or 'bridging the feedback loop' or any similar abstraction. Or possibly they do.

Simply through the natural operation of their coherency apperception, their musicking/coherencing bridges the gap of this feedback loop, and aids the closed system in aligning itself deeply enough with the open system to steer itself back into a regenerative and sustainable alignment.

Intrinsic to this, the closed system becomes either a little bit, or a lot more like an open system in the process; it discovers new means of organization which did not seem apparent from within previous recursions, and these inevitably move in this direction. Once again, they do not necessarily intend to do this consciously; but they may. It will simply occur as a natural resultant of the self-organizing activity of life, which the coherency apperception has become the instrument of. Just as it has throughout all human history. For their very activity is coherencing: this is what the artist does, as agent in this particular field of interactivity.

In other words, the predilection of the activity of the implicate whole in this particular case is towards coherencing exogenated through the coherency apperception of the artist; thus the works of art they create intrinsically re-organize

the explicate order in which they are embedded towards more synchrony with the implicate order, naturally, and organically³⁵². Has the artist ‘done’ this? Has the implicate whole ‘done’ this? Both questions remain in the domain of two, and fall away as we emerge into that of not-two.

In the modern world, the avante-garde has an incredible amount to teach people, who more than ever before 1) exist within an explicate order which is nose-diving towards catastrophic resultants, and 2) have an internal coherencing process, and a sensori-motor engagement with the world, which matches that of the artist in regards to complexity more than ever before³⁵³. Just as the artist discovers in their bioresonant laboratory of direct experience new coherencing potentials, so does modern man and woman concomitantly discover new coherencing potentials in their

³⁵² This entire discussion is predicated upon the assumption that the artist is aligned in their coherency apperception with a predilection towards bioresonance, mutagenesis, and the implicate.

³⁵³ This is not just due to access to education in the Western world; it is also due to the increasing levels of complexity and the inherent pressure this has placed upon the internal coherencing activity to match it as a self-organizing operation which self-equilibrates in response to it. This is the systems level reason why new technological means and technologies like Deep Listening emerged roughly simultaneously on the historical landscape. Modern man is both plagued by the artificiality of his intelligence more than ever before, and simultaneously inspired and facilitated in exploring new creative avenues and forms of intelligence more broadly than ever before. This is facilitated by social access to materials (more people have the opportunity to learn an instrument, or how to paint, or can travel), the internet and the wider dissemination of information, as well as many other factors. In fact, this natural emergence of implicate intelligence is the self-equilibration which is occurring in response to increased complexity in the explicate modus as it arises in the modern world around us.

own bioresonant laboratory of direct experience, in response to the ever-changing landscape they find themselves in.

We cannot divide artists from the rest of humanity. In fact every human act of intelligence is an exogenation of the coherency apperception: A mother of three children, in a grocery store, keeps a running track of the potential unfoldment's of her children in interactivity with the aisles, objects, people, and other phenomena in the store. This is the same intrinsic enactment apperception the composer uses in compositional process; the mother apperceives an infinitude of unfoldment's trans-temporally and trans-spatially, just as the composer did, and her apperceptive coherence matrices idiosyncratically produce synchrony spikes in response to the 'data' she wishes to receive from this infinitude as a mother creatively raising her children. This is interpolated through a conscious embodied process which, in this case, does not provide data in regards to music – but rather data essential to child-rearing, signaling when it is time to guide her children: 'stay away from that', 'whatever you say, sweetie', 'think about what your teacher said yesterday', 'I think it's time to leave the store', etc³⁵⁴.

A corporate CEO instantaneously apperceives infinite unfoldment's in her intrinsic enactment apperception, as well; within this, the possible unfoldments which

³⁵⁴ This is not to imply that this process is limited to the domain of language, as it in fact extends to the entire field of sensori-motor engagement between the mother and her children, in similar complex dynamism as that found between a musician and their instrument.

potentially hundreds of employees may create with their decisions (in interactivity with her assessment of their competencies), how this results in larger corporate unfoldment in interactivity with market factors, etc. are included, and interpolated in her conscious process in terms of the data she wishes to receive. Her coherency apperception pattern cognizes either bioresonantly or mimetically the avenues of success which she wishes to foster for her company and herself; out of the infinitude of unfoldments, the synchrony spikes she registers help guide her to unfold those most coherent from this frame. Just as the coherency apperception helps guide the composer in the compositional process, it helps guide the human in the 'humaning' process.

As we are talking about the general case of intelligence, which animates the entire universe, even what we would consider to be unintelligent acts – like an alcoholic taking the last sip which causes his liver to fail – are a resultant of the apperceptive process. In this case, we can predict that a teleomorphic recursion of a built perceptual universe in which the existential miasma has become so amplified that the imbibing of alcohol as a potential unfoldment has produced a stronger synchrony spike in the ACM's than biological survival. From the purview of the closed psychological system called 'the alcoholic', taking that last sip is coherencing. From the system of the body, it is incoherencing unto complete dissipation.

Where is your hand resting right now? What thoughts are unfolding in your head? What are you about to do? The answer to each is the direct unfoldment of the ACM's in concert with the instantaneous apperception of the infinitude of

unfoldment's in the universe trans-temporally and trans-spatially which is intrinsic to the bioresonant organism of the human being and its action unfoldment. Once again, the simple is the new complex.

Apperception of coherency also means 'occurring in the continuum/flux' - outside of the walls of the built perceptual universe - it is the apperception of the coherencing of the 'real', of what is, as opposed to the coherencing of that perceptual atomization as a theoretically closed system. In time, that perceptual atomization evolves to become a conscious tool for engagement with the continuum/flux, rather than an unconscious means for staving it off.

So basically: are you serving a bubble, or are you serving life as it is? If you never make contact with the continuum/flux, the latter will be impossible. You will be relegated to mimetic recursion of that which has been given to you in the shared built perceptual universe. A form of artificial intelligence, as well as of imprisonment, as illustrated herein.

Avante-Garde music teaches us to pay attention to this – while it can do this through explicate processes and means, it doesn't always have to. If it is itself the resultant of implicate processes, this will in turn be implicit in its underlying geometries. It will return us to the continuum/flux, and implicate process, merely through the subliminal transmission of these – as the generative activity underlying a system is most fundamentally what it transmits. I experience the miracle of unfolding process implicit in Terry Riley's Persian Surgery Dervishes, Pauline Oliveros' Deep Listening, John Coltrane's A Love Supreme – each returns me to the continuum/flux.

What returns you to the continuum/flux? In the end, this can only be answered empirically, idiosyncratically.

The composer, as well as all musicians³⁵⁵, registers a ‘spike’ in the field as various musical possibilities are explored which orient them towards new coherencing potentials. When a composer knows that a piece is finished, they experience a spike which may be analyzed as the coherency of coherency: it signals the arrival at a set of instructions which will be sustainably unfolded in a trans-temporal and trans-spatial field, in interactivity with listener and culture. I believe that this process occurs primarily unconsciously; we find conscious ways to interpolate it, until we inquire into it directly. In the mimetic mode, it is motivated by Pavlovian affirmations subtly reinforced throughout the artist’s life: of appropriate style, of social value, etc.

My own compositional process began simply³⁵⁶: at the piano. In the sensori-motor engagement of the feedback loop between myself, the instrument, and my listening.

³⁵⁵ As well as all human beings; but let’s restrict our analysis to musicians for right now, understanding that the same coherency apperception processes described in detail in terms of composition also occur in terms of performance and improvisation, as well as all life processes, moment to moment, as the instrument of the unbroken dissemination of coherencing: synechtodiadosis.

³⁵⁶ As we near the close of this text, I’d like to share some personal experience, again; this time from the perspective of musical process.

As I improvised at the piano, phrases, harmonic modulations, embellishments, or some other musical element would emerge from my playing and capture my attention. I would then pursue these more, developing them into compositions - in our analysis here, we might say that these were the 'stones' selected from the beach, which would then be polished and presented as a finished piece of work, either individually, or as a set. Beneath the surface, at a more subtle level of generative process, some synchrony spike was being registered subliminally, which signaled me to follow that particular compositional avenue. Later, I would unveil these and explore them more consciously in my bioresonant laboratory; at the time, this was cognized as 'intuition' or 'compositional instinct'. It was thus an unconscious process, which was being interpolated through my conscious frame.

As my playing unfolds at the piano, does my intention produce the resultants?

Intention seems to be something which I possess, and yet, when I inquire into it deeply, it is resultant of infinite inter-penetrating activities in which it is embedded.

In the end, it is possible that I possess nothing.

The piano and myself comprised one dynamical whole; not-two, out of which the musicking emerged as a processual unfoldment of iterative dynamism. Over time, this dynamical system would expand to include new elements, new musical dynamical systems which joined with its activity, and in so doing, changed the multi-dimensional whole which it represented: guitar, voice, MIDI composition, composition for other instruments and performers via notation, software

environments for creating musicking, various hardware implementations, custom algorithmic and synthesis engines, human consciousness as an instrument, etc.

As my life processes unfolded, I discovered the emergence of the implicate activity within myself – through musicking activities as well as other activities, which included (but were not limited to) the particular cases of attentional inquiry³⁵⁷, Deep Listening, meditation and meditative techniques, my relationship and engagement with nature, as well as implicitly through improvisation, performance, and the general case of sensori-motor engagement with the world³⁵⁸. As this implicate activity emerged in my experience more and more conspicuously, I learned how to recognize it, orient to it, and allow my activities (like musicking) to be informed by it. Prior activities which had been engaged more predominantly from the explicate modus seemed less and less important.

In time, it became essential to learn how to include this implicate activity in my compositional process, and to even make of it the source of my musicking. As mentioned earlier, my experience meeting Pauline was an important moment in the unfolding of this process.

³⁵⁷ These are not listed in the order in which they appeared.

³⁵⁸ Many meditative techniques I was first exposed to during the period after the train accident mentioned earlier; obviously, this entire time period presented a whole new experience of ‘sensori-motor engagement’, or lack thereof, as I was primarily bed-ridden for 5 years.

At first, the inculcation of the implicate activity was primarily enacted via a sort of ‘meditative improvisation’ - wherein the state transition shifts, or coherency absolutes implicit in consciousness in the unfoldment of the embodied inquiry were exogenated through the dynamical system of musical improvisation. The implicate activity was also enacted through the inclusion of ‘states’ in my ‘state space’ (which these state transition shifts represented) in more traditional performance contexts during this early period.

While attending Bennington College, I pursued concert piano performance more seriously than I have since. Our conversation will be elucidated meaningfully by a specific performance of Debussy’s *Les soirs illuminés par l’ardeur du charbon* which went particularly well. I remembered nothing of the performance afterwards; I could have just as easily been asleep, for the amount of data my conscious purview had retained.

This phenomenon had occurred several times before, but this incident was the most conspicuous example. Every time it occurred, audience members reported to me afterwards that the performance had been of a particularly unique and special caliber.

One professor commented that the timbral and dynamical range I got from individual fingers in the performance of *Les soirs illuminés par l’ardeur du charbon* made the piece sound like it was being performed by an orchestra. More importantly, there seems to be a correlation in this example between the absence of the phenomenon of the conscious observer, and the dynamical expression of the system inhabiting new domains of state transition, synchrony, and coherencing absolutes.

Clearly, my sensori-motor apprehension of the piece was solid enough to continue without me – if ‘I’ wasn’t there, then what organized it?

In this case, the performance included a ‘state’ in my ‘state space’ which emerged organically from process, and not the atomized signal chain of intention producing resultant (unless we ascribe it to the intentionality of non-intentionality). In alignment with our study of the intrinsic activity of the brain, it was a state which emerged from the conscious ‘doer’ leaving the stage, and the dynamical activity which emerges organically from that³⁵⁹.

What this has evolved into is an active dialogue with the implicate, wherein I seek to facilitate compositional process emerging from it as a dynamical activity I observe and discover in my bioresonant laboratory of direct experience. As I became more and more aware of these synchrony spikes and the resultant coherency absolutes in the organism, and sought to bring these to conscious awareness, I developed strategies for including them in my compositional process more skillfully, as well.

In 2015, I had a significant personal experience of the implicate activity – one might call it a spiritual awakening – which changed my life. I composed a piece of music entitled Drinking Water by the Selling³⁶⁰ ‘from’ the activity which emerged

³⁵⁹ 20X as much dynamical activity in regards to the brain, and the resting state, as reiterated throughout.

³⁶⁰ A play on the phrase ‘selling water by the river’ which hyperbolizes feeling free to access the infinite unconditionally in a world where it has become mediated through

during this experience, which will be illustrative of the discussion of musical process, the implicate, and coherency apperception herein.

Throughout the compositional process, I paid intimate attention consciously to the synchrony spikes which emerged in the bioresonant laboratory of direct experience, and how their patterns of unfoldment resulted in coherency absolutes: the emergence of an exponentiated activity. As I explored various compositional ‘choices’, I would simultaneously observe the unfoldment of various orders of coherency and coherency absolutes as they emerged in this internal field. I would specifically pay attention to the similitudes and contrasts between how these unfolded differently with each choice, and use this to gradually omniangulate the ‘deepest’ coherency – that which was not ‘colored’ by a hidden explicate process.

Thus, using my body as an instrument of coherencing, I navigated this landscape: exploring what appeared to be coherencing of the biological organism, what appeared to be coherencing of the psychology processes, what appeared to be coherencing of the geometries of the implicate, what appeared to be the coherencing of ‘vibrations as they were’, etc³⁶¹. and allowing my compositional choices to emerge

countless layers of commoditization, to the point that people generally only ‘drink the water’ that is sold to them.

³⁶¹ I mentioned a methodology for ascertaining empirically whether consciousness was the enfolded source of phenomena in The Implicate Order in Consciousness on p. 80-82. In addition to the methodology alluded to in the text above, that process was included, as well: wherein I observed the unfoldment of various specific cases of

from and be guided by this intimate observation of the unfolding coherencing activity within me.

I feel a very deep connection to the 19th century Indian saint, Ramakrishna, and a particularly strong connection to a vignette between him and a doctor who treated him right before he passed away. I further felt an integral link between the implicate activity which emerged during my ‘spiritual experience’, and this vignette.

I took this segment of The Gospel of Sri Ramakrishna and subjected it to a series of chance operations which produced 2 text scores, with bracket notation. I then performed these, recording them into two separate stereo channels; this process was an apt exogenation of the implicate, as well as of the inter-penetrating fractal of meaning which The Gospel of Sri Ramakrishna represented to me, as the process intrinsically gave up the compositional control of the conscious observer (n), while

coherencing, these geometries internally, and also observed which ‘came and went’ temporally, and thus existed within an unfolded frame. In other words, certain coherencing activities persisted in the face of rigorous attention, and others did not, just as certain atomized constructions will fall away when observed directly. Over time, this careful observation unveiled the streams of coherencing activity which did persist, and which were therefore more implicit to the implicate geometries being unveiled through the compositional process. These were further enfolded orders which explicate processes had previously veiled, and which rigorous attention had revealed.

I argue that phenomenologically this process implicitly brings one, and one’s compositional activity, nearer and nearer to the general case of coherencing, as rigorous attention upon atomized coherencing activities unveils the implicate geometries and coherencing absolutes which they obfuscated as part of the operation of implicit atomization functions.

simultaneously being organized by the inquiry into coherencing mentioned above (as well as the phenomenological inquiry mentioned in the footnote) in regards to the compositional choices which produced the chance procedures. The resultant indeterminate collisions which emerged between phoneme fragments, partial phrases, new words, and new ontologies were delightfully relevant in a stochasticity which would never have been composed by a ‘conscious observer’ (n). Further, as the inquiry into consciousness had ‘organized’ this ‘disorganization’, it was also ostensibly an exogenation of the implicate geometries.

I modified software which I had already written, which takes a live video feed and in real-time analyses densities of light in it, creating a complex map of these which changes over time in alignment with the image, and then turns this into an intricate web of inter-nested probability maps, sourcing the live generation of re-synthesis of a sample of water drops in a cave from this. I prepared a white wall, and wore all black; I played the recording of my voice performing the two channels of text cut-up from The Gospel of Sri Ramakrishna, and danced as the central channel of the composition was generated live. Thus the indeterminacy of the chance operations (unfolded over a longer temporal span than the recording) also instigated a feedback loop with my body and consciousness as I moved.

As I danced, I paid intimate attention to the coherencing process inside of me: to the synchrony spikes and coherency absolutes which emerged in complex dynamism as I moved. I allowed my dancing to ‘come from’ that, and especially from any coherency absolutes which emerged spontaneously in the moment. My

bioresonant dance process was thus an isomorphic mirror to the processes of inquiry described above.

The process of observing synchrony spikes internally was reflected in both a realtime, and temporally expanded exogenation, which was further brought into interactivity via several layers of compositional and performative process. In addition, the contrast between live dancing (and the organicity of the internal inquiry process which fueled both it and the compositional process) and technological systems employed further mirrored the terrain wherein deeper inquiries into the body and consciousness have paralleled increasing complexity in technology and life processes over the last 100 years.

I believe it is inevitable that our musical and compositional process eventually expands to include all of life in her processes. I do not know if I am there yet personally, but I believe it is unavoidable due to my understanding of complex dynamical systems.

It is the inexorable outcome of the self-organizing coherencing of life expressing through us as musicians that our process will initially emerge in the form of humble beginnings (like at the piano), and gradually expand to include: the acoustic ecology, the musicks of other cultures, musicks we previously 'hated', the body, consciousness, inquiries into history, inquiries into consciousness, inquiries into physics, etc. as well as everything considered to be 'ordinary' (the sound of the refrigerator, the dog begging to go out while the composer tries desperately to hammer out that final cadence, etc.). This process will invariably expand and, over a

longer temporal span, include everything, all phenomena, returning to the implicate whole which it arose from as part of the cyclical nature of existence³⁶².

Thus, hyperbolically, we may say both that the implicate is always the composer, as well as that we must endeavor to include it through our self-effort so that it may self-organize the orders we find ourselves unfolding within more and more completely. This is inevitably ‘done’ through our embodied inquiry.

In the process of this integration, the implicate becomes the composer all over again: this time consciously, rather than implicitly and unconsciously. This is isomorphic to the phenomena wherein spatially we can never contain the whole, while holographically, even a single quark contains the entire universe: the entire implicate whole, in terms of organizational information. We do not need to go searching far and wide, or in some ‘other realm’, for the implicate – everything that ever was, and ever will be, is right here, enfolded inside of us and everything we come into contact with.

³⁶² I am not saying that I believe every musician will arrive at this in their lifetime, but I do believe, from my study of dynamical systems, that it is an inevitable outcome which the organism as a system is ‘moving towards’ intrinsically due to the pressure on it from the implicate order to re-organize in higher and higher coherency organizations. When the dynamical inquiry which is implicit to all musicking is allowed to take its full course and unfold, this will occur. And as this dynamical inquiry is, in the end, the emergence of enfolded orders of complexity, and thus of the self-organization of the larger system, it is inevitable in the longer temporal span from a processual understanding which is scientifically grounded.

Our musicking is the realization of this, the ways and means by which we transform the trans-temporal, trans-spatial infinitude which is the source of our very existence and beingness into a vibrational unfoldment which reflects this isomorphically. And then share it. The future of musicking is to continue to employ this faculty more and more consciously: to use the technology which was given to us, rather than that which was artifacted by us, in more and more sophisticated ways, towards the building of bridges to the implicate - as musicking has done progressively over the last 100 years, as it approached the singularity in complexity (and consciousness) represented by the implicate principle, the third indeterminacy, and Deep Listening.

From the ferment of this singularity in complexity will emerge the next iterative state transition shift in the system – and the way forward is decidedly in. We will not achieve this through any conscious ‘doing’ - but rather through a conscious ‘un-doing’ - in becoming the vacuum dynamics of consciousness, the space in which the phenomena of creativity and musicking emerge.

The implicate geometries outline the particulars of these vacuum dynamics – to the degree to which we become available for the depths of these, a possible future for musicking which is truly regenerative will emerge. These implicate geometries are discovered in the turn away from artifacted complexity, as embodied in the cognitive inversion, the return to the continuum/flux, the phenomenological reduction, the return to ‘sound as it is’, the implicate methodology, and the entire gesture at the level of consciousness contained in this text. From our historio-musical perspective at this

moment, this looks like feminine endings, a vast open space in which to arise, no conclusions, and infinite creative possibilities. And the total and definitive falling away of the modes of consciousness which animated the art of our past.

Gestural Piece

Practice gestural listening, simultaneously attending to the coherencing activity internally and the sounds observed externally. Allow this to be one activity, one gesture, and sing it.

Hearing without Listening

See if you can hear without listening.

See if you can return to raw hearing in its pre-mediated state.

APPENDIX A

For my compositional submission(s), in alignment with the biangulatory inquiry presented in the text, I present two pieces: PHI X 174 (intellection), and Piece for Non-Local Butterfly (empiricism). I'd like to share some of my experiences with these pieces, as the report of the activity of the dynamical system from within the dynamical system, and how these reflect the underlying generative activity of the universe.

I spent several years exploring methodologies for translating DNA into music via software during the period of my "Natural Lexicons" concert. PHI X 174 is my favorite output of these projects - it realizes the genome of a virus that has the shortest - ostensibly the 'simplest'³⁶³ - sequence we know of. It is realized by a grand piano Disklavier in this recording.

Bioresonance was integral to the coherencing of this process. As I explored the algorithmic direction, and especially in confronting the form of complexity embodied in algorithmic music, new means were required to get me past a stuck place at a certain point. David Cope shared with me that he would exercise while listening to his outputs' when he felt this; that for him this facilitated the processing (in the dynamical system) of the complexity of the music for him, and helped him bring it to

³⁶³ In quotes because of course, as we've emphasized throughout, in hyperbole (like simplicity/complexity) is interested enfolded orders of deeper understanding.

coherence³⁶⁴. I tried his suggestion, and it worked; I went on to develop my own idiosyncratic techniques for approaching this and facilitating bodily engagement in my compositional process at that time. It wasn't that bodily engagement wasn't there – it was that it required new means, and this is a metaphor for everyone in the modern world.

The second piece is a remarkable illustration of processual unfoldment and the synchronicities of life, and one I never could have imagined or written myself. In October, 2016, I solicited performers through the Deep Listening community for a new DL piece. The date of performance was set for November 27th, 2016. Four days before the performance, I wrote Pauline Oliveros on FB inviting her to be present for the piece; as it was a non-local performance, this was quite practical, even though she was on the other side of the country.

The great composer, whose legacy rings throughout this text, passed the next morning; I do not know if she ever read my invitation. She did, however, get the message, as evidenced by her conspicuous presence during the performance reported in private conversations between the performers and myself³⁶⁵.

5 performers around the world hit 'record' at the same moment, clapped (to

³⁶⁴ It is a useful synchronicity to note that it is possible, had I not done this work with Cope, I may not have taken the workshop with Pauline the next summer and ended up going down the path that led me to where I am today.

³⁶⁵ Ostensibly more 'public' written accounts by the performers' (as well as myself) may be found in Appendix D.

facilitate my later synchronization of the audio), and begun performing the process outlined in the score (Figure 8), which they had been in direct bodily engagement with for 6 weeks at that point. In addition, listeners around the world begun to listen, enacting the following instructions (please do so when you listen to this piece, as well):

Piece for Non-Local Butterfly

Listening instructions (piece is 21 minutes and 37 seconds long):

Please find your ideal listening space/environment and get comfortable. Take whatever **time** you need for this.

1) Bring awareness to the heart. Be still until you feel that your entire being has become completely still.

2) Bring awareness to sound. Bring awareness to sound, and to vibration.

Let your awareness expand outside the illusions of time and space. Relax into that.

Let everything else go.

If your attention wanders or becomes distracted, return to #1

Listen deeply for the entirety of the performance.

Very subtle vibrations do not mean absence of music.

Thus a non-local unfoldment of the dynamical system I facilitated occurred.

Due to Pauline's recent passing, it was particularly poignant.

In reviewing the audio documentation, I chose to include just 3 of the 5 performances in the recording presented here. This apparently ‘simple’ piece facilitates intrinsic complexity (and is thus infinitely more complex than any through-composed piece) so successfully that it highlighted the unique demands of implicate process, and competency therein, required to realize this idiom of musicking.

3 of the performers were experienced Deep Listeners; 2 were relatively less experienced, and had difficulties engaging this process with the same level of musicianship as the other 3. It illustrates nicely the fact that the emergent direction Deep Listening is the vanguard of is fostering a new type of performer³⁶⁶: one whose multi-dimensional competencies in embodied process facilitate new possibilities in musicking, as well as heightened competency in extant avenues. As a composer, it is tantamount to being invited to write for a newly invented instrument.

These rich competencies shine through in idiosyncratic diversity in this recording; it illustrates the phenomenon of non-locality beautifully, and in ways that I could not have imagined. I feel, and maybe I am taking a liberty in including this here³⁶⁷, that Pauline was proud of this performance, and somehow more present than

³⁶⁶ As well as a new type of listener.

³⁶⁷ As raw vibratory unfoldment, or coherencing (and from a dynamical systems perspective), what we are observing is the activity in the field surrounding the performance of this piece; thus the performer’s experience, as well as my own, are integral data for omniangulating this coherencing activity. Further we would be

any of us were ‘in our bodies’; I was deeply honored and humbled to be allowed to commemorate her work in this synchronistic fashion: we did not say ‘bye-bye’ to this butterfly. The flapping of her wings will continue to unfold and influence the academic music tradition for many years to come, especially through the embodied processes’ of the countless students and colleagues she touched, often just through a brief encounter. I cannot think of a more beautiful metaphor to end this text on, as it is a metaphor posed by life, and not by me – the metaphor intrinsic in the unfolding process of this piece.

The fact that I intended to a certain degree in entitling the piece “Non-Local Butterfly”, and in the way I composed it, to illustrate non-local unfoldment, and the intrinsic simultaneities and synchronicities therein, etc. but that it became so much more in the unfoldment, more than I ever could have imagined, and that this is further a better illustration of everything described in this text than I ever could have ‘written

remiss to discard, as we have with mystical experiences, the dynamical activity they point to in favor of re-enacting cultural constraints. Pauline Oliveros has said that Deep Listening is “...intended to expand consciousness to the whole space/time continuum of sound/silences.” (Oliveros *Deep* xxiv); thus Deep Listening is also about apprehending the processual nature of coherencing intrinsic in that continuum.

myself³⁶⁸; of the implicit, living, embodied metaphor³⁶⁹, and our interactivity therein - is a gift, like creativity, which I will never be able to fully 'explain'. I merely wander down the proverbial beach alluded to in the chapter on 'coherency apperception', and at times, the poignancy of the stones that land in my hands is literally breath-taking; I remain, as always, in awe at the activity I am privileged to take part in, for I am well aware that these synchronicities are out of my control, and not a resultant of 'me'; and that what animates them, animates my art.

³⁶⁸ Pauline intended to help me complete my dissertation; in her passing, she paradoxically helped me to illustrate what I have been trying to say better than she ever could have 'in a body'. Further, she illustrated the enormous degree of activity and possibility available in the intrinsic activity of life when the 'conscious observer' no longer interposes upon it, better than any of us ever could have 'in a body', for the body is both the praxis of engagement, as well as of entanglement, with life processes.

³⁶⁹ Hopefully by now it has become clear what I mean by the metaphor implicit, as opposed to explicate metaphors posed by man, for it is the essence of the implicate methodology.

APPENDIX B

Explicate	Mimetic	Morphoteleolosis	Self-same
Implicate	Bioresonant	Mutagenesis	Self-similar

Descriptors of generative praxis described, and found exhibited in intelligence, creativity, art, complex dynamical systems, consciousness, etc. - ostensibly all life processes. These shape a generative spectrum, and not dichotomous counterpole relationships.

Fig. 2

Biological Filtration	These produce sonic experience in praxis to direct experience. Coherency apperception is understood to be the generative seed of their idiosyncratic unfoldment.
Psychological Filtration	

Fig. 3

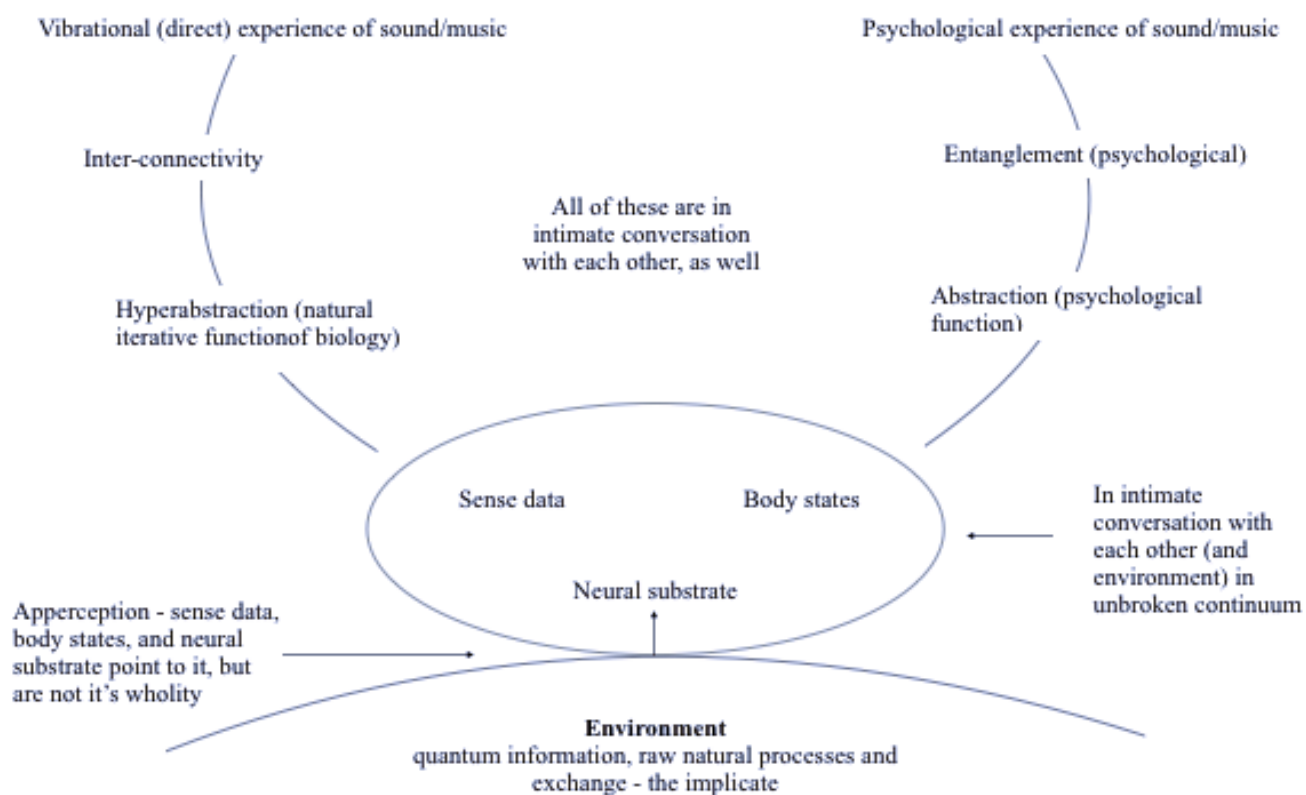
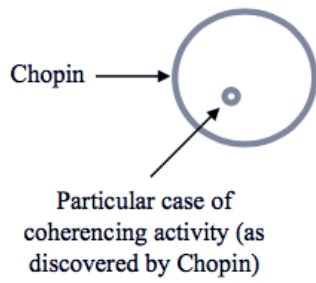


Fig. 4



Chopin discovers a particular case of coherencing activity via his CA (coherency apperception), and then translates this via a score, which a performer then reverse translates via their rehearsative process. This is then translated again via performative process, and the listener then reverse translates this via their listening process. To what degree is the coherencing activity discovered by the performer and listener isomorphic to that discovered by Chopin?

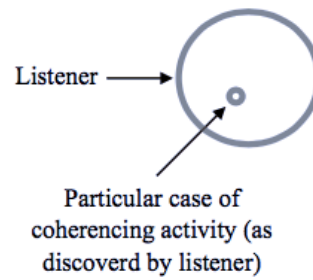
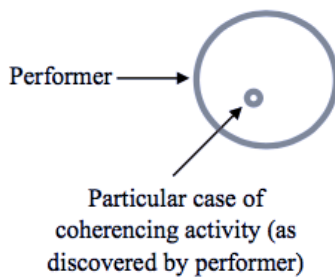


Fig. 5

APPENDIX C

Fig. 6 (on facing page)

First page of Webern's *Quartett Op. 22*.

I.

Anton Webern, op. 22

Sehr mäßig ♩ = ca 96 *pian.* *arco*

Geige

*) Klarinette

*) Tenor-Saxophon

Klavier

rit. - - - a tempo

*) Klingt wie Violin.

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Fig. 7 (on facing page)

First page of Beethoven's 9th *Symphony*.

Dem König Friedrich Wilhelm III. von Preußen gewidmet

Symphonie Nr. 9

d-moll

Ludwig van Beethoven op. 125
herausgegeben von Peter Hauschild

Allegro ma non troppo e un poco maestoso (♩ = 88)

Flauto I
Flauto II
Oboe I
Oboe II
Clarinetto in B I
Clarinetto in B II
Fagotto I
Fagotto II
Corno in D I
Corno in D II
Corno III in B basso
Corno IV in B basso
Tromba in D I
Tromba in D II
Timpani in d, A
Violino I
Violino II
Viola
Violoncello
Contrabbasso

Allegro ma non troppo e un poco maestoso (♩ = 88)

sotto voce

pp

sempre pp

pp

pp

pp

Fig. 8 (on facing page)

Score to *Piece for Non-Local Butterfly*.

Piece for Non-Local Butterfly

For any number of non-local musicians (any instrumentation)

21'37"

By Jonathan C. Hoefs

This piece should be performed *internally first*, and then privately, and then publicly.

Score:

- 1) Bring awareness to the heart. Be still until you feel that your entire being has become completely still (and that any residual internal sound(ing) from #2, or from before the performance, has come to complete stillness, as well).
- 2) Bring awareness to the point directly between the eyebrows, and a little bit back. Allow sound(ing) to organically emerge, occur, play itself out, and then dissolve (internally). This may last for any length of time. Return to #1 when complete.

Once one has mastered internal performance, one should move onto private performance, simultaneously translating the internal sound onto instrument or voice. *There should be no gap*: sound(ing) should emerge, occur, play itself out, and dissolve instantaneously and organically, just as it did in internal performance. There should be no 'listening internally and then translating outwardly' (as two processes): *only performative unfolding as one unbroken stream of sound(ing)*.

Once this has been mastered, the piece is ready for public performance. All performers will collaboratively choose a performance time, simultaneously performing the piece from wherever they are at (with no contact via internet, telephone, or any other exterior means during the performance). Each performer will provide a high-quality recording of their performance, as clean as possible, for mixdown into final documentation.

Any audience members who wish to attend the public performance shall have no exterior contact (via internet, telephone, etc.) with the performers during the performance, either. Instead, they should settle into the non-local stage and listen deeply from wherever they are at for the entirety of the performance. Very subtle vibrations do not mean absence of music.

It is asked that both performers and audience members share their experiences afterwards (via written text) for inclusion in the final documentation.

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APPENDIX D

Written accounts of experiences from *Piece for Non-Local Butterfly* performance,
11/27/16:

Ximena Alarcon (performer)

I loved the cycle focusing on my heart and then on the third eye.

I realized within the process that the stillness is inner stillness and that the body wanted to talk and to move, I questioned my sense and understanding of stillness.

I was surprised with the process and the precision of its evolution, I entered in a cyclical rhythm, and confronted my fears with sounding before is the right time. I felt I went through a 5 minutes' cycle.

I feel it was a need of re-birth, a cohabitation with a new yet familiar land of sounds, I feel it was a great focusing experience, demanding indeed.

1. In the first cycle I began to breathe in #2, I am here.

I swallow my saliva, I breath out.

2. In the second cycle there is an agglomeration of words: coming with difficulty, forceful, asking, demanding.

I am with a soundscape of childhood with television voices.

3. In the third cycle my body decides to move: blowing explodes. Caresses dance, touch is sound and sound touches shapes unfolding the protective fabric between the outer world and the skin, I am a full body still protected.

Always there is a voice muffled I mistake it with my own voice.

Train blows, traffic rubs the streets.

4. In the fourth cycle there are words: questioning and defying stillness voice without control and a controlled voice.

Is it all organic? It is raw.

I continue hearing the singing voice of the multiple frequencies. It is not my voice.

5. I linked the cycle with what I breathe in and out: voice comes with air, I am listening, my breathing is not even, my intention with my sounding is not even, I am fully on the middle of my eye brows and don't want to stop sounding, I look at the time, and continue sounding, I start to feel the intensity of the time limits, I will end, I will end, organically in a last explosion I breathe out.

Something that happens inside cannot be recorded, our own listening cannot be recorded.

I thought of Pauline's process of dying.

I thought of our ephemerality.

Björn Eriksson (performer)

Thanks for setting this up Jonathan! It was really interesting to perform this piece! I have been under an intense stress because my mother is ill, then came the sad news of Pauline not with us no more, so I was not doing my proper dress rehearsal until this day, after noon. It was very OK though, and I was surprised how my playing was different on the performance time compared to the rehearsal time. Breathing essential.

Yes. I might have gone a bit wild at some points - but I think this is what I sensed and felt. I was playing electronics (AudioMulch) with a specificity of 550 Hz and 660 Hz. in remembrance of Pauline I wanted to play these frequencies. (will post a picture soon). At some moments my MIDI controller just went havoc and played rainbow colors, without me knowing why - and I felt is as if Pauline was with us. I cannot say that it wasn't a MIDI feedback situation happening - anyway, what was felt at this moment as it was starting to go havoc was that she is playing with us. And I smiled and felt happy. I felt presences of you. Marie that I never met before - I cannot say. But I felt there was room for us all to play together. I am utterly interesting to take part of further developments of this piece and to see the later results. I am happy that it all happened this way. I am sure if we do it another time, some things can be better prepared on my side. I was recording with a Zoom H2N set up for 4 channel capture, 24/48kHz. One side directed to my speaker setup with 2 of the feedback boxes. The other sides directed towards the Ballaphones (and one feedback box). I also in addition to this recorded the electronics output in a file in my computer. So in addition to the 4-channel recording I will send you the electronic output (that might - or not - come in handy). I think I need to stop here. THANK YOU AGAIN JONATHAN for proposing this piece to us! LOVE & HUGS!

Zovi McEntee (performer)

In practice, the concept of listening through playing rather than listening for playing became rather freeing for me to bring forth expressions of sound I normally would

not have felt appropriate for the moment if I were to think about it in anywhere but the moment itself. In terms of the score, in the first half or so I did not have a lot of #1, the internal clearing, and had much more #2, the sounding, but as it went on, the internal clearing became more and more important. It was almost as though I had run myself out of breath on the first half and had to catch my breath and breathe heavily in the second, but with internal sounding instead of breath. I did find it rather worthwhile in my choice of instrumentation to choose instrumentation that would service the physicality of breath (thus, wooden flute) because I felt the immediacy of breathing and the variation it imposes was quite appropriate for this piece in the same way as a butterfly's flight.

Jonathan Hoefs (composer/listener)

Sitting down, I could immediately sense all of the other people in the field. It felt as if we were in an energetic concert hall together, in the noosphere. Experienced an incredible amount of dynamism; this travelled through all elements of the spectrum between deep and profound multi-dimensional listening and interconnectivity, rich silence in the body, lucid insight and creativity, to immediate and visceral delight in vibration as it occurred around me during the performance: several times a local sound struck with such immediacy that it was like getting goose pimples. One thing very pronounced in my experience was the raw dynamism of vibration (beyond just sound) as a phenomenon, just as it is: the subtle vibrations of my body, for example, seemed very “loud”, and amplified compared to what they are normally. They were music;

this was not a stretch or imagination exercise, or a “trying to perceive them that way”, just simply what they were.

APPENDIX E

Andy Bieman
6/11/13
MUSC127

Reflections on Mined Experience

This biggest benefit I reaped from this class was from mining my own experience. Specifically, I particularly related to the concept of trying to understand one's own listening processes to better know oneself, an idea presented in the Upanishads quote on eCommons. I very much related to the concept of prismatic knowing, as I try to use all experiences I have and how I react to them as a way to self-reflect and better understand myself.

From the self-reflection that this class promoted, I focused on the idea of accepting each experience "as it is" in order to find the most contentment from it. While I already had tried to do this before taking the class, I feel that the class really helped me remember that this notion of contentment is actually more in my control than I may think. For example, in previous years, I would often find ways to stress myself out about experiences when I didn't need to. Regarding my own music listening, I would stress myself out about how whatever I am listening to at one moment is not the *best*, most fitting music I could be listening to at the time, and then worry about not knowing what my own preferences were. Yet recently, not only have I felt more in tune with my own preferences, but also more in tune with the idea that any music can be right for the current moment if you want it to be.

I recall a John Cage quote from the documentary we watched in which he was explaining how he usually does not listen to pieces of music more than once because he instead wants to listen to whatever sounds seem to be the most natural expression of the moment he is currently in. For Cage, the idea of listening to the sounds of traffic outside one's window has a certain purity to it because the sounds are not being created to cerebrally or emotionally toy with the

listener, they are merely existing, Cage reciprocates this notion of sounds being created simply as sounds by listening to them as sounds, without psychological filters or preconceptions.

Throughout the course, I realized that my own mind was unconsciously filtering out many sounds (usually ambient/environmental) that, upon actually listening, I would find enjoyable, simply because I had created categories in my mind of what sounds are worth listening to the same way I listen to music and which are not. Like most other people, I had privileged sounds that were created with an intentionality of me hearing them, thinking that other sounds were irrelevant to my listening. Yet this could not be further from the truth: as someone who has always enjoyed listening to music that exists on the outer limits of accessibility, I realized that I could get much more enjoyment out of my day to day experience simply if I listened to the naturally-occurring environmental sounds around me the same way I listened to certain ambient and drone music. I had some revelatory experiences with this practice of devoting my full attention to such sounds. Once while doing a "sound as it is" practice I became so entranced by the sounds of various appliances in my Cowell apartment's kitchen and living room area that I just sat in the same place, completely content, listening to these sounds and unaware that time was passing for nearly fifteen minutes. Similarly, when I was doing the same practice on a bridge outside the Science and Engineering area, I became entranced by the interplay between the sounds of distant music combined with the much louder environmental sounds of birds, wind, people walking, and buildings humming. During both performances of John Cage's *Lecture on Nothing* which I took part in, I experienced a similar sense of flow and entrancement in the moment. The *Lecture* is one of my favorite texts as of late not only because of its ideas (which I realize are reflected in this paper), but how its form and content work as symbiotic parts of a whole to convey these ideas. Its repetition can be either irritating or cathartic and trance-inducing

depending on what one lets it be, and for me it was the latter. It calls attention to the principle that one is in control of the psychological filters that create the conditions for contentment in each situation one is in. I felt that the most profound and rewarding benefit of this class was the way that it reinforced this idea, through listening practices that served as analogues to dropping such filters. In Lecture on Nothing, Cage reflects the principle of prismatic knowing that the class was based on with the mantra that "It is not irritating to be where one is, only irritating to think one would like to be somewhere else." (Cage, Lecture on Nothing)

Trask Dunlap
Music 127 – Hoefs
June 10, 2013

Sound, Listening, and Consciousness

As this quarter progressed so did my ability to see. My image of myself has changed, my perspective has changed and my ability to see has changed. I've travelled through the prism of experience and been shot out from every surface of the crystal, propelled into a vast, infinitude of potential experience. And I can see it as it happens. My experience of myself has transformed to a perspective where I am a part of my environment, just the same as anyone else is also a part of the same environment. I've mined my experience and listened to others' accounts of their mined experience and in doing so I have learned so much.

Sound portrays all experience. As I have come into greater touch with hearing, listening, feeling, and being sound, so have I come into greater touch with sight, feeling, remembering, thinking, breathing, sitting, etc... There are so many ways in which a practice of listening to something as more than it is applies throughout life – a great metaphor for waking up to the life that we've been living. It is so easy to get lost in life, due to emotional conflict; things not going our way, or just general narrow-vision closed-mindedness.

This class really helped me to wake up to existence on a whole other level. One of the major ways it did this is I have been aware of sound in my life and how it guides me. As a musician I have an intricate connection with sound, when I am improv'ing guitar or singing I take myself to a magical place. When I listen to music I am taken to a magical place. I want to be able to take other people to that magical place just because of how I am able to feel and embody the sounds that I create.

In order to do that, I must mine my experience. I must come into touch with the magic that surrounds me, that surrounds all of us, in our day to day lives. A lot of that magic *is us*. The people in my life make my life all that much more worth living. Because of that, and just because I would wish to be treated similarly, it is infinitely important to respect and value other peoples' experience. Though I have to admit that it is sometimes hard not to judge others, this class really got me to step out of myself and reserve judgment of others. Because of this I was able to really appreciate and learn from my fellow classmates experiences. I was, way more often than not, completely surprised, excited, and enlightened by what people had to say. Especially when Beth brought up in the last class that everything just boils down to Love. My first reaction was to judge her for being cliché, but as she continued I was captivated and compelled, and didn't want to do anything except agree and cheer her on.

One of the most important things that I've learned in the last year of my life has been to be present, to live in the moment. This class portrayed a culmination of this experience for me. It translated my thought into a more conscious way of being. The concept of living in the moment turned from a stagnant thought into a living, breathing thought, into a conscious attitude of mind, into an embodied manifestation of here-ness. There is no other place to be. The past and future don't exist except in some part of my self in this moment. I have the power to choose whether those parts of me are big or small, though sometimes they overwhelm me, and I am taken out of the flow of the moment.

And so, I must just be myself, and continue to be myself in the fullest sense that I can imagine. Because as we listen to life we start to hear all of the smaller things, the little things that we've forgotten about. Like the sound of our own footsteps on the sidewalk. Like what a tree looks like at 5pm on a summer day. Like every 20th thought, those fresh thoughts, the new ones

that are speaking to us from behind a curtain of experience. Those magical evenings of sharing music, of sharing conversation, of sharing life. Those evenings that I *want* to be a part of in as many ways, and for as many times as I can.

Consciousness and attention are fully fascinating and freeing practices of being. They transmit us into the science of life while simultaneously transforming our poetic perspectives. What a joy it's been to share this experience with everyone and to feel safe in doing so. I will allow myself to live in the wake of this experience, and ride the wave onto the shore of my becoming.

Angelica Rodriguez
Music 127
Jonathon Hoefs
11 June 2013

Personal Experience: The Sound Experience

When I first saw the description of this class on the class search engine, I couldn't believe my eyes. A class called, Sound Listening and Consciousness; I knew from then on that I would get into that class no matter and I am so glad that I did. On the first day of the class, we went over the syllabus and talked about what we would be doing that quarter and I couldn't help but have a smile on my face the entire time. This had to be the coolest class ever offered at UCSC. I had no idea what to expect from the class, but I felt sorry for other students who wouldn't get a chance to experience what lied ahead for me.

At first, I had a hard time getting into, what I guess you could call, the mindset of the class. It required open and free thinking and never asked for one absolute answer. Two things that are fairly new to me, but the pace of the class was perfect for me. I was able to assimilate appropriately and I soaked in all the new ideas that were being flung at me. To my surprise a lot of the times, I could apply the ideas and concepts that we learned in class to other areas of my life. It was as if I was supposed to take this class in order to help me deal with other parts in my life. If I was ever silent or seemed absent-minded during a class, it was only because I was thinking about how the ideas we were talking about crossed over into my life.

I have always struggled with what I now know are called psychological filters, whether it applies to listening or just in living in general. I used to only listen to what I wanted to listen to- to what I allowed myself to listen to. This class has shown me how to open up and remove those psychological filters so that I may listen to whatever is actually happening- so that I may listen to reality and be open to it.

This applies to life, I feel as well. As I mentioned in our last spiral-talking circle during the last class, I have a friend who had a very difficult childhood. As a result, she doesn't always make the best of choices and has difficulty keeping close friends. But this class has taught me to listen to her without any of those psychological filters. Because of this, I was able to see where she was coming from and not judge her actions, but instead I tried to reason them out from her perspective. This has greatly strengthened our friendship because I feel like she is comfortable being her true self with me, and I with her as well. All of this I believe covers the first two principles- Mind your experience and Value other's experience. It helped me realize that not all people will have the same thought process as me or that they will not have the same reaction as me to life certain events. It seems pretty obvious to me now, but when you're so stuck in your own head, it is hard to pull out and think from another's perspective. This class has helped me learned how to do that.

I have never been one to share personal stories or feelings with people, let alone people I don't even know, but this class has shown me that it is okay to do so. The more other people opened up, the more it made me want to open up. Seeing people be present and vulnerable appealed to me- I respected it.

Coming out of this class, I can say I have learned much more than what I expected to learn. Everything about sound and music, listening and consciousness, it is all so important. But we classify some of it as trivial because we believe other things in life are more important. When in reality, if we made these more essential in our lives, we would be a lot happier. No one can make you feel a certain way except yourself. If we only listened to ourselves more, I feel a lot of us would be more at peace in our daily lives.

APPENDIX F

(Addendum to Apperception of Apperception)

With the theory of translation/reverse translation, we have described a processual unfoldment from the outside. We can also describe it from the inside: in terms of interactivity. If we look at performance, as well as participatory scenarios of all types (basically all of the configurations of interactivity in dynamical systems): what is the nature of this interactivity? I argue that it is engagement, not at the level of explicate process (which it appears to be at superficial levels) but rather at the level of implicate process. The conscious observer (whether noun or activity) perceives a built perceptual universe (and its unfoldment) as 'real' within a narrow atomized aperture metaphorically analogous to the 5% - as the differential between implicate activity and explicate activity (in this case, brain activity spikes which have been presumed to denote the action of the conscious observer as an atomized singularity). They then interpose this 'real' with either an atomized, or a dynamical quality, contingent upon their generative alignment.

In fact, the smaller activity of the 5% has the appearance of being integrally inter-linked with the coherency apperception when inquired into, in terms of the fact that upon it's alignment the entire praxis of experiential unfoldment, and

isomorphically, creative alignment, may be reoriented³⁷⁰ (not controlled): in a dynamical feedback loop wherein action and attention are both instigator of/instigated by runnels and chreodes – which leads to a more grounded interpretation of action-differentials in neural cognition as resultant of coherency apperception (a) as aperture of unfolding process, and thus conscious observer (a) as participant therein, rather than conscious observer (n) as singularity³⁷¹ in an atomized landscape. As dynamical resultant, not linear signal chain. And further, as an activity of *facile*, and not one of control, intrinsically.

One may also see that a sophisticated apprehension of conscious observer (a) is in fact contiguous with the activity of the coherency apperception itself. But only if it does not stop at any point processually, if it never becomes frozen in atomization, if conscious observer (a) = unbroken inquiry, in alignment with synechtodiadosis. As an implicate gesture, the above discussion is isomorphically analogous to the attentional inquiries herein - implicate attentional inquiries arguably invited by vibratory

³⁷⁰ As is enacted in the attentional exercises.

³⁷¹ I am more interested in singularities, or absolutes, in the domain of coherencing – which actually exist, as opposed to singularities in the domains of intellection, abstraction, and atomization which cause us to spend 40 or 50 years of our lives chasing after intellectual phantoms within them as a theatre.

geometries unfolding and transforming in time - or coherencing – which musicking is then an isomorphic exogenation of.

One might argue that the 5% is exclusively an explicate activity. At the level of relative analysis, this is certainly true. At the absolute level of analysis, however, even that 5% is intrinsic (we could also say ‘from the purview of the implicate’). We cannot actually answer the question of ‘who’ we are³⁷², but it does seem like our attentional unfoldment, which I argue is the generative seed for unfolding iterations in the dynamical system which ensue (and that this is illustrated by the attentional inquiries, as well as musicking), and which thus integrally impact the resultants of this system, is the praxis. As this generative praxis is inexorably inter-linked with that of the continuum/flux, ‘who’ we are must be a fluid, dynamical phenomenon – an ever changing flux itself.

Hence the power of embodied inquiry to ‘tune’ the instrument - implicitly exploring the apperceptive coherence matrices which then unfold in concert with tradition, conditioning, etc.; which at a phenomenological level of analysis ‘play themselves’. As we are ‘woken up’ from unconscious recursion, self-equilibration may enter where before it was barred from access; ‘I play’ naturally becomes ‘universe plays’, and the music (as well as identity) continues to unfold in new iterations.

³⁷² Other than as a dynamical processual unfoldment.

The problem is in visualizing movement or interactivity when all phenomena have dissolved into one activity. As long as there are at least two agents, elements, notes, target tones, etc. in a system, there is interactivity: movement from point A towards point B, movement away from point B by element A, movement towards element A by element B, etc. In the open system, there is only one activity.

We know how to talk about two. It is difficult to talk about not-two.

The direct experience is an emergent phenomenon: an emergent unfolding of the underlying generative activity of the organism. At a superficial level this varies from actor to actor, and from body to body. At the deepest level of inquiry, there is no variation: all diversity operates within a larger field of unity.

Only the intellect is frustrated by a lack of absolutes in defining the direct experience; only the intellect is puzzled by an unfolding and ever-changing activity being our most intimate access to an unchanging one. Only the intellect is frustrated by answers which lie in the domain of vibratory unfoldment, and not within its own idiosyncratic particulars.

Of course the intellect is a closed system; it has confused self-similarities observed in nature as being evidence for the possibility of an absolute: self-sameness. Driven by its own existential mimesis, it cannot even fathom the possibility that an endless field of diversity and interactivity emergent may actually exogenate a unity. The direct experience is both the fundament of our experience when 'unconscious' and buried beneath layers of psychological recursion, as well as being a constantly transforming unfoldment when observed 'head on', or directly. It is the purview of a

complex dynamical system, from within said system, in unbroken interactivity with the open system, observed when the illusion of interactivity dissolves simply into activity. Not-two.

In other words, it is easy to talk about the activity of one, as long as we are satisfied with what appears: with what has been given. What is given is the continuum/flux: an infinite unfoldment, every moment anew, which can never be arrested. The atomized mind wishes to reorient it upon an abstracted stage defined by its own particulars: by codifying it, reducing it, objectifying it, etc.: each erroneously presumes to arrest said continuum. The resultant gap may only be maintained through lack of self-disclosure. Why have we mistaken an infinitude for a poverty? In our abstracted recursions is true limitation: in the unfoldment of listening, of experiencing, and of interactivity³⁷³ with life, is true infinitude. Or, simple is the new complex.

Why are we not satisfied to let unfolding process unfold? Why must we incessantly interfere: arresting it with ideas, judgments, and codifications interposed upon it? Why must the impulse to satisfy the teleomorphic impulse and masculine endings be so endemic in our culture, as if to not bring it to conclusion would be tantamount to failure in some duty?

³⁷³Once again we talk about unfolding process, so my interactivity as a conscious observer leads to the existential confrontation with activity animating that conscious observer; here, we speak to every layer of the process in multidimensional unfoldment simultaneously in order to embody a dialectic which excludes nothing.

When we talk about two, we can talk about movement, interactivity, etc. When we talk about one, all we can do is observe unfolding activity, as said activity. The implicate principle, and apperception, and everything they reveal, is immanent. Kant visualized a transcendent apperception; apperception can only be transcendent if by that we denote transcending the illusion of the built perceptual universe, and returning to the continuum/flux. In phenomenological observation, apperception is self-evidently immanent, nearer than our very own nose.

Obviously the historical deconstruction of the subject/object relationship engaged by Dewey and James is pertinent here (Reybrouck). For as long as this dichotomy remains, there are two, and the previous argument will be seen to be irreconcilable from within the theatre built upon this premise. When it dissolves, musicker and musicking become one activity again. The continuum/flux, undisturbed, blossoms into activity unbounded, just as the intrinsic activity of the brain spikes to 20 times its normal activity during the resting state.

In this text we have gone beyond mere intellection into the domain of exploring unfolding process as it results from the enactment of attentional gestures significant in this landscape, including that of dropping the conscious observer (n)³⁷⁴. As stressed over and over again, like music, if we arrest the process before it unfolds,

³⁷⁴ Enacted implicitly through the inquiry shared on p. 94 – wherein the question-based implementation of the implicate methodology implicitly breaks down atomization in the terrain inquired into.

we will never actually arrive at an apperception of the unfoldment, and the revelation of the generative process implicit. We will only arrive at an apperception of our constructed theatre. Hence the rigorous methodology employed to inhibit the morphoteleological impulses of judgment, codification, etc. which inherently arrest the unfoldment in cul-de-sacs of masculine endings: pre-determined conclusions and their maniacal self-machinations and ontological seductions. In inhibiting these, we discover the processual possibilities which they veiled, ostensibly the feminine endings in consciousness: these unveil new possibilities in every domain, from musicking to life processes in general.

How do these activities arrest the process? Each is a filter: useful only within the particulars of its own domain, and in relationship to its activity within that of the dynamical system within which it is embedded. They have been directed at a pre-determined conclusion (this is intrinsic to morphoteleosis and the teleomorphic impulse); it is like wishing to see one thing, but instead seeing another, and not accepting the truth; and instead artfully editing it out of existence.

In terms of inquiring into the direct experience and how we mediate an experience of music, these processes (explicate) arrest the process (implicate), cordoning it off into their own morphoteleological cul-de-sacs, wherein one can literally get lost. The critique of reductionism constitutes a critique of the process of getting lost in one of these cul-de-sacs, and then soliciting academic complicity, rather than finding one's way out. One will observe that unfolding process, in terms of the direct experience, ceases when we divert into one of these avenues. Inquiry

ceases, as well. At least it ceases in terms of our conscious apperception of such: for the direct experience, and the implicate³⁷⁵, will continue to unfold underneath the filtrative processes we have enacted upon them. There is no arresting synechtiadosis.

Thus the rigorous inquirer becomes intimate with the unfolding processes of cognition and vibratory systems directly. All musicking occurs in this praxis: in the praxis of direct experience, and our mediations thereof (which intrinsically includes cognition and vibratory processes). It is an art of unfolding process. Thus to know intimately and rigorously this unfoldment is to know the very generative source of our art, and that is why it has been stressed so thoroughly herein.

I have critiqued the nexus of the Western intellectual approach to the conscious observer as an atomized noun so heavily because I believe it unconsciously recurses an underlying generative activity of morphoteleosis and self-valorization to the point of destructive resultants being produced, intrinsically emerging from an unexamined self-same attractor in the dynamical system which is historically outmoded at this time. Ontology becomes implicitly hyperbolic in this dynamical domain, with none of the traditional handholds to grab onto. It has begged a distinction between unconscious (a) and unconscious (n); hyperabstraction (neurology) and abstraction (psychology); music (n) and musicking (a), and other

³⁷⁵ As well as the conscious observer (a) and every other activity-based dynamical process.

contrasts which help us to discriminate the dynamical terrain revealed by the implicate principle. It behooves us to further differentiate between conscious observer (n) as has been sharply criticized and deconstructed herein, and conscious observer (a) as activity, which is far more benign, and in fact, integral.

Just as the psychological abstraction of experience immediately dissolves from its reified state into unfolding activity when the praxis of direct experience is returned to, so does the reified fiction of the conscious observer as noun dissolve immediately when the conscious observer as verb, as unfolding activity in the continuum, is returned to – when the continuum of inquiry is returned to at the level of consciousness, rather than being re-oriented by a foci of expected conclusion as a morphoteleological interposition upon said process.

Let's explore this further. Our processual analysis has made an essential distinction between the activity of processual unfoldment 'as it is' and its arresting through reduction as embodied in music, cognition, intelligence, ontology, and processes in every other domain. These have been revealed to contain essential implications in terms of consciousness. Upon this nexus the generative activity recursed in consciousness produces a dynamical system of mimesis or mutagenesis, the latter being concomitant with natural creativity.

Similarly, the conscious observer as subject/object, once dissolved, does not eliminate the conscious observer as unfolding activity, but rather potentiates it. It is similar to when the sun emerges from behind an eclipsing body. Just as I believe that syntactic processes in the brain are interested in nature, and that the explicate modus

of intelligence imposes hierarchical associations upon them in order to locate them within an atomized built perceptual universe which it is comfortable with, so do I believe that the unfolding of a conscious aperture in dynamism with the open system has been burdened by the historical moment of overexerted explicate processes which interpose the fiction of conscious observer as reified entity: as noun, upon it. The invaluable activity of the conscious observer (a) is synonymous with the implicate instrument when no longer interposed upon; it is the activity which is liberated by the decimation of the atomized landscape.

Identity becomes then, like music, fluid unfolding process in intimate interactivity with the implicate: with the open system. The conscious observer, as well, when it knows itself processually rather than atomistically, persists as an activity which facilitates the unfolding process (or coherencing) of the open system, rather than seeking to distinguish itself from said context in the teleomorphic impulse towards masculine conclusions.

In fact, discovering the generative activity of the conscious observer (a) represents discovering the action potential of ones musicking, and is thus further vital to our art. One could say that each individual has a morphogenetic signature which is, like ‘the real’, veiled by filtrative processes. In fact, the conscious observer (a), and ‘the real’, are contiguous from the analysis herein.

Direct experience and coherency apperception can both be understood as unfolding purviews of interactivity with the open system from within the open system. Each is anew in every moment, an unfolding byproduct of interactivity with

dynamism, not atomism. Thus the self-equilibrating quality of the organism, and the self-organizing quality of the system in which it exists, are in fact one activity whose resultant is the appearance of these purviews at any given moment to a conscious frame which modulates within it (just as we modulated various processual analysis' at the beginning of this chapter), as well as which modulates it.

This notion of aperture is important; it connects this discussion to the focal/global listening praxis. Just as perception and the built perceptual universe is an aperture upon the outside world, so is the coherency apperception an aperture upon the intrinsic activity of coherencing, and so is the direct experience an aperture upon our existential unfoldment; each is the aperture of the instrument wherein the conscious observer (a) is the user.

Direct experience can also be understood as the point of equilibration in conscious experience; when the abstracted purview is cessated (to use Husserl's term), and the intrinsic activity of the organism is allowed to function as intended. The direct experience in praxis to the CA³⁷⁶ is tantamount to the existential confrontation coming into direct contact with the field of infinite creative diversity; through said interactivity the ephemeral phenomenon of human consciousness produces creativity, intelligence, and action.

³⁷⁶ Coherency apperception.

And is not produced by them. The morphoteleological impulse makes a form an end in and of itself; whether it is the form of a concept, an idealistic vision or nationalism, or a subtle form which cannot be put into word, but which is better represented by those which the geometries of coherencing point to, as well as those found in the neural substrate. In making this form an end in and of itself, it also ostensibly seeks to re-build the world in its image. The making of a dynamical system in the image of this form, fundamentally attempting to create of it an atomized activity, is inevitably a comic tragedy, as the generative activity being sought to interpose (atomism³⁷⁷) is incongruent with the more fundamental generative nature of the dynamical system it is embedded within. The failure of the attempt to atomize the dynamical system may, unfortunately, occur in the long-term or the short-term contingent upon many factors; it is far preferable that it occur in the short-term, if for no other reason than compassion; however, concrete reasons here include the concomitant cessation of implicit objectification, sexism, racism, genocide and violence as an exogenation of the self-same attractor, etc. as outlined throughout.

Knowledge and ontology, as well, may be re-oriented upon the praxis we have established in the discussion above. The question-based implementation of the implicate methodology is a specific and practical application of this which simultaneously facilitates and illustrates it.

³⁷⁷ In alignment with the notion of atomization presented herein.

In this implementation, the inquirer poses a question. In normative unfoldment, pre-defined morphoteleological pathways would then be enacted in answering the question, including those which define what an ‘answer’ to a question must look like: this is a masculine ending in consciousness intrinsically. The entire process of front-loading occurs inevitably within the built theatre of intellection; thus, in pre-framing the possibilities of unfoldment, it will importantly filter out certain bandwidths of possible unfoldment as part of its natural function as a morphoteleologically aligned system.

In the question-based implementation of the implicate methodology, the praxis of the continuum/flux is engaged simultaneously with the posing of the question – the instructions say: ‘answer the question not through the mind, but through the body, through the felt sense, through unfoldment itself’ - pre-framed intellectual algorithms are thus dismissed for the time being, and a forum is created for investigating what geometries of the implicate unfold in response to the attentional gesture implicit in the question, in alignment with the return to the continuum/flux, the inquiry into ‘sound as it is’, the phenomenological reduction, etc.

Without the artificial limitations of the bandwidths of unfoldment normatively filtered out by the theatre of intellection being interposed upon them, new iterations of the system make themselves apparent. The possibility of ‘answering’ the question not through a pre-framed conclusion in the built theater of intellection, but rather through the discovery of new geometries in the implicate, is revolutionary. If my theories are correct, in short: that the generative unfoldment is sourced not in the

domain of the conscious observer (n) and the atomized landscape, but rather in the domain of coherencing and the geometries of the implicate (which then becomes exogenated through process, and mistaken for the resultant of the conscious observer [n]), that all communication occurs solely due to vibratory isomorphisms across systems, and that it is inevitable that streams of coherencing ‘tuned into’ by the coherency apperception become exogenated via exometaphrasi and exodiadosis (whether through musicking or life processes), then this activity becomes significant ontologically to a degree which it is difficult to understate. It quite simply turns ontology completely on its atomized head. The apprehension of new geometries at the level of the implicate (synonymous with coherencing), is implicitly concomitant not only to the discovery of new creative possibilities, and the further possibility of the discovery of new coherency spikes previously filtered out by the theatre of intellection, but even more importantly to the complete reversal of the activity of morphoteleosis historically. The same process of creative exogenation described in musicking applies to the intellectual domain, as well as all other domains. As this is a general understanding of process, communication, and cognition which we have arrived at, everything described above is precisely accurate processually when translated to other domains.

The geometries discovered (even subliminally) at the deepest level of process will invariably exogenate through the embodied life processes of the organism (which naturally includes the realm of intellection), as these represent enfolded dimensions of organization emerging into the dynamical system of the organism. This is the

practical dynamical model we have established, wherein enfolded orders organize unfoldment. Thus this technique may facilitate intellection in an expanded domain not constrained by the 'frames' of tradition, culture, the conscious observer (n), etc., and ontology may be actively reoriented in alignment with a more grounded apprehension of the actual terrain of its unfoldment. Just as in musicking, the fundamental process of coherencing is what is going on, and superficial processes of intellection are then interposed upon this. This understanding illuminates the pedagogical success of Sound, Listening, and Consciousness, as well as the underlying generative activity of efficacious embodied means in musicking, as well as the emergent streams returned to throughout. I invite the sincere reader to explore employing the question-based implementation of the implicate methodology not just with the questions offered up in this text, but with any creative question they wish, and to observe carefully what unfolds from the activity of this gesture. If the question implicitly points to a terrain in the implicate which they wish to unfold more intimately and deeply, the unfoldment which ensues will occur invariably upon the praxis of coherencing which exogenates this terrain; this may be treated as a guiding principle in formulating questions, and instigating the implicate gesture from which the unfoldment ensues.

When talking about composition, the analysis herein is that an instance of musicking: a composition performed, an improvisation, any instance, is a gesture of unfoldment at the level of coherencing, and raw vibratory processes. And further that the overemphasis on explicated gestures which reiterates the unquestioned primitives in this domain through artifactual complexity is also implicitly complicit with the

mirrored morphoteleological generative processes at every other level of society: politically, educationally, etc. and represents a cul-de-sac historically which is also decidedly outmoded. And that further, entree into the domain of implicate gestures at the level of coherencing is a profound counterpoise which our tradition is already exogenating, and is poised to exogenate even more profoundly when it can consciously take its destiny by the forelocks and claim the actual stage of unfoldment upon which this gestural unfoldment occurs. And upon which musicking occurs. It is the level of process contiguous with the continuum/flux. Attentional inquiries, Deep Listening, etc. all point to a musical and pedagogical direction which will facilitate this, and which is destined to change the future of musicking, barring a failure to enact the gestures which they have offered up to be performed.

Deep Listening is a product of the field; it cannot be owned, controlled, or forced by any 'one' because it is the activity of the implicate order. It is something that we discover, not something that we do. Hence the focus upon the deconstruction of the conscious observer (n) in this text; said deconstruction potentiates the state transition shift in the dynamical system called 'creativity', as well as Deep Listening (both of which are synonymous), which we seek to effect. Which opens up the field of infinitude the question-based implementation of the implicate methodology also unfolds.

Gestural listening is fundamentally understood to refer to the gestures of life, and not the gestures of psychology. For example, we tend to experience music as the latter, even though that is merely an interposition upon the former; we tend to

experience it as an unfolding ontological object within the constraints of what we believe music to be. In the post-colonialist pluralistic collision, this is no longer a tenable position – we have to share not just realty space, but ontological space, as well.

In other words, we are so caught up in an experience which has been implicitly constructed in ways which we are discouraged from looking at directly and honestly that engaging in an activity outwardly as simple as an empirical investigation into what happens when we allow sound to be as it is actually revolutionizes the field of cognitive possibilities in which we are operating – once again, simple is the new complex! Not due to ‘allowing sounds to be as they are’ as a lexical atom, but due to the unfoldment which this enactment produces when enacted – one which implicitly returns us from our atomized landscape to the natural complexity of the continuum/flux, and reorients our activity, which results from centuries of accumulated runnels and chreodes which have habitually enacted ‘not allowing things to be as they are’ in their implicit generative roots.

If I notate a particular musical gesture, I am telling the musician: ‘do this’. It is a form of knowing how; I am explaining to them, or explicating for them, what to do. Thus it is an explicate order of expression. At the same time, if I tell a performer ‘to allow sound to be as it is, and then see what sound emerges out of that’ it is also an explication; I am also, in this case, explaining to them what to do. However, it is an explicate frame designed to exogenate the emergence of the implicate through processual unfoldment, and is thus of a different order of expression than one which

is purely explicate in terms of recursive complexity - which is also ostensibly an attempt to control the sonic output in an indeterminate universe, highlighting the hyperbole therein.

Gestural listening is simultaneously listening to the unfolding processes within the organism, and the musical object as it unfolds in acoustical space. It intrinsically exposes and unpacks this concert - the coherencing activity - or the generative activity underlying - which is the actual composer of all music. It is the enfolded score metaphorically, and it is simultaneously the concert which has been going on from whatever moment our Tabula Rasa human 'invented' music, to now - even as psychology pretended like the concert of the constructed, front-loaded built perceptual universe which was interposed upon this was the actual stage of musicking.

Hence this entire text has 'simply' been about reorienting our perception. And somehow processually bypassing this front-loading long-enough to unveil a different possibility – a different understanding of musicking - one implicate, not explicate; one which is generatively isomorphic to an activity which can be exposed in the avante-garde, modern neurobiology, dynamical systems study, philosophical streams, and disparate other arenas - and which further points towards the regenerative future of musicking, as well as all of humanity.

Intrinsic to the above discussions is the question - is the coherencing activity of the organism of the musician internally impacting the musical object? The listener? The tradition? From a scientific point of view, this is implicit - of course the co-

resonance of systems is at play. We need to investigate more deeply - empirically, as well as scientifically - the way that the brain and systemic coherencies of the skilled musician (that were found to be analogues to those found in Buddhist monks) are impacting those in the listener. The degree to which this more fundamental level of coherencing is being exogenated and transmitted. Either one-to-one (through organic co-resonance), or through translational processes of the music. Until we establish neurobiological inquiry at the level of depth discussed earlier, we can only rely upon inductive processes to address these questions.

I am further suggesting that the human biology is molded by a generative activity which reveals itself through cognition - in a cognition predicated upon what it filters out, by what it excludes - generally in favor of a self-same recursion - morphoteleosis. And that this is the manipulative quality I alluded to earlier - wherein we mold what is to our built perceptual universe, and discard the former for the latter.

Is it possible that the exogenation of this generative activity, recursed for thousands of years, has shaped human behavior, and the violent, self-centered activities which so many intellectuals have debated over the years as to whether they are inborn or not? If the neurobiological and dynamical explorations herein are valid, the answer to this is decidedly yes – but also that it is only one potential among many. As these generative activities naturally recurse in the system, cutting deeper and deeper runnels and chreodes in both neurobiology, as well as in the morphogenetic field, and perpetuating said activity (as well as a modus of navigating the filtrative faculty of the system), it is inevitable that the isomorphic similitudes between certain

streams of exclusion in cognition (filtration, Pribram's view of the brain, etc.) and human behavior (racism, sexism, genocide, colonialism, judgment, reductionism, etc.) become highlighted significantly.

However, this does not mean they are inevitable – we must not mistake our habits for inevitabilities, just as we must not mistake our theatre for 'what is' - rather it means that we must uncover the generative unfoldment of these habits, and through understanding this, reorient how humans act upon, create with, and experience life in our future, as part of a processual response-ability implicit to being human.

Through exercise of the attentional faculty we may reorient the coherency apperception – the composer of all music, as well as the generative praxis of all action and unfoldment in the human domain. Thus the unfoldment which ensues from attentional inquiries as a starting place, can re-orient the entire organism, and the runnels and chreodes which it self-organizes around. One does not need to engage in a complex moral and ethical analysis, deciding 'which' activities to end, and which to reinforce, if we reorient the generative praxis which action unfolds from.

So we start simple - here we began with sound. In the discovery of a generative activity which is the counterpole to morphoteleosis, we reoriented the coherency apperception upon that, and into a greater dynamical participation with the self-organization of the universe. Gradually, over time, this will re-orient the activity of the entire organism; when the implicate, bioresonant, mutagenic activity has become more prevalent than the morphoteleological activity of our outmoded past, the system will naturally re-organize around that. Musicking which exogenates the

implicate activity does the same; audience members who participate in their unfoldment will recurse in the runnels and chreodes implicit therein. Thus, as we effect this re-orientation within ourselves, we become more *facile* at effecting it in our musicking, and subsequently, in the listeners who participate in it.

The implicate activity - the self-organization of the system, rather than that of the fictional atom, is now the composer of human processes. Nature is allowed to unfold under the self-organization implicit, children are allowed to unfold under the self-organization implicit, political systems are allowed to unfold under the self-organization implicit, music is allowed to unfold under the self-organization implicit. Reorienting the germ of generative activity within the field by reorienting the unfolding processes which the attentional faculty participates in, and concomitantly recurses: the entire dynamical system called planet earth inevitably becomes reoriented, and with it, our future.

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