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Conceptual Blending, Metaphors, and the Construction of Meaning
in Ice Age Europe: An Inquiry Into the Viability of Applying Theories of
Cognitive Science to Human History in Deep Time

By

Timothy Michael Gill

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

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in the

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of the

University of California, Berkeley

Committee in Charge:

Professor Margaret Conkey, Chair
Professor Rosemary Joyce
Professor Kent Lightfoot
Professor Eve Sweetser

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Abstract

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Timothy Michael Gill

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Although the peoples of Ice Age Europe undoubtedly considered the drawings, engravings and other imagery created during that long period of prehistory to be deeply meaningful, it is difficult for people today to discern with any degree of accuracy or reliability what those meanings may have been. Grand theories of meaning have been proposed, criticized, and in some cases rejected.

The development over the last few decades of modern cognitive science presents us with another angle of approach to this difficult problem. In this dissertation I review two related cognitive science theories, Conceptual Metaphor Theory and Conceptual Integration Theory (Blending Theory), and ask whether they provide a basis for informed interpretations of that imagery.

This inquiry presents serious epistemological obstacles. I argue that some of the underpinnings of metaphor theory, specifically the notions of primary metaphors and image schemas, utilized together with a theory of meaning based upon embodied cognition, have applicability universal enough to warrant their use in connection with this period of õdeep time.ö They provide a means to understand *some* aspects of the construction of meaning in Ice Age Europe, and they offer a more sound scientific basis for interpretations of the physical experience of apprehending the imagery. I also contend that blending theory can provide a template for assessing some claims about the meanings of specific pieces of Ice Age imagery. Finally, drawing further on blending theory as well as modern work on the anthropology of culture contact situations, I apply cognitive science to claims regarding the presumed interactions between, and relative cognitive capabilities of, anatomically modern humans and Neandertals in Europe at the beginning of the Upper Paleolithic.

Dedication

This dissertation is dedicated to May Lynne, Ian and Alyssa Gill, who supported my effort despite being required to pay the opportunity cost of a decade of activities not undertaken; and to my mother and father Lois and Tom Gill, avid proponents of higher education, and Old Blues themselves.

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Preface

Any general theory or system of thought requires summarization and categorization, and therefore simplification, and carries with it an attendant loss of precision. Alexis de Tocqueville, in terms characteristic of his era, described the problem quite eloquently in his work *Democracy in America*, *Volume 2*:

> *The Deity does not regard the human race collectively. He surveys at one glance and severally all the beings of whom mankind is composed; and he discerns in each man the resemblances that assimilate him to all his fellows, and the differences that distinguish him from them. God, therefore, stands in no need of general ideas; that is to say, he never feels the necessity of collecting a considerable number of analogous objects under the same form for greater convenience in thinking.*
>
> *Such, however, is not the case with man. If the human mind were to attempt to examine and pass a judgment on all the individual cases before it, the immensity of detail would soon lead it astray and it would no longer see anything. In this strait, man has recourse to an imperfect but necessary expedient, which at the same time assists and demonstrates his weakness.*
>
> *Having superficially considered a certain number of objects and noticed their resemblance, he assigns to them a common name, sets them apart, and proceeds onwards.*
>
> *General ideas are no proof of the strength, but rather of the insufficiency of the human intellect; for there are in nature no beings exactly alike, no things precisely identical, no rules indiscriminately and alike applicable to several objects at once. The chief merit of general ideas is that they enable the human mind to pass a rapid judgment on a great many objects at once; but, on the other hand, the notions they convey are never other than incomplete, and they always cause the mind to lose as much in accuracy as it gains in comprehensiveness.*

The more explanatory power one wishes to assign to a system of thought, such as a theory of human cognition, the more one should bear in mind the dialectic between breadth and precision.

Acknowledgements

       I would like to thank my dissertation committee members for their assistance, guidance and friendship. In particular I would like to express my gratitude to Professor Margaret Conkey, the chair of my committee and my principal dissertation advisor, with whom it has truly been a privilege to work. Anyone for whom Meg has been a mentor or colleague will know what I mean.

Curriculum Vitae

1982   B.A.   University of California, Berkeley
1985   J.D.   Boalt Hall School of Law, University of California, Berkeley

1985-2002   Private Practice of Law (Maritime Law)
2002-2005   General Counsel, Ship Management Firm
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2002   M.A.   Anthropology (Archaeology), University of California, Berkeley
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INTRODUCTION

1.   The Investigation of Meaning

> *"What does it mean?" This is at one and the same time the most*
> *frequently asked and the most naïvely conceived question asked of Upper*
> *Paleolithic representations.   – Randall White (1997: v)*

        People do want to know what the õmeaningö of Ice Age art is. And while the
question may be naïve, it is one of the most natural of questions, in the sense that it arises
from and is consistent with the naturally evolved cognitive tendencies of our species. For
we are a species, as Deacon (2006) points out, that constantly finds reason to seek the
õsignificanceö of some crafted form, that has difficulty suppressing the urge to find
õmeaningö in natural events, coincidences, and natural forms. In our Western tradition,
we wonder whether a black cat crossing the road bodes ill for our day, whether Halleyøs
comet will affect our fortunes in war, and whether a random stain on a door might be a
sign of The Savior. We ascribe meaning to natural places such as rocks, mountains, and
springs (Bradley 2000). So however naïve we may find that simple question to be, it
should come as no surprise that people will ask it, especially when confronted with
representations as extraordinary as those of the European Upper Paleolithic.
        In this dissertation I investigate the construction of meaning in the European
Upper Paleolithic from the perspective of these apparently innate human cognitive
tendencies, and particularly from the perspective of embodied cognition and the
metaphorical understandings and conceptual blends that arise from our bodily
interactions in the world. The key question here is whether modern theories of cognitive
science can assist Paleolithic archaeologists in our attempt to understand how Ice Age
imagery and interactions with that imagery were meaningful to the people of that time.
Do these theories, for example, provide any new tools that prove useful in the inquiry?
Does applying theories of cognitive science reveal anything to us that we otherwise
would not have seen?
        The issue here is not whether we can prove that certain imagery was meaningful
to specific people in a specific way. It is unlikely that any approach will provide
evidence of that probative value, and setting that as a goal will doom any such inquiry to
failure. Lewis-Williams (2002: 48) reminds us that õit needs to be repeatedly emphasized
that no explanation of Upper Palaeolithic art can ever be ╫provedøö He summarizes the
necessary approach in these terms:

> If we have learned anything from a century of research on
> the meanings and purposes of Upper Palaeolithic art it is
> that we have no agreed method for tackling the problems
> that they pose, and that we have to address different kinds
> of questions, such as the meaning of images and their
> strange placement in caves. To begin to confront such
> diverse issues we need to intertwine a number of strands of
> evidence; one õpureö method, be it inductive, deductive or

> analogical, will not suffice. . . . Proof, it is true, will remain
> elusive, but complementary types of evidence that unite to
> address the complex problems posed by Upper Palaeolithic
> art can, I believe, produce persuasive hypotheses.

(Lewis-Williams 2002: 67-68). Rather than seeking õproof,ö my question will be whether using these theories opens up new perspectives, whether it raises questions that may not have occurred to us if we had used other approaches to the archaeological record. Conkey (1993) has noted that:

> Although I would never claim we can know with certainty
> *the* meanings of Paleolithic art, we can certainly make
> some interpretive moves toward an enriched and
> multifaceted understanding of what it might have meant.

There are serious epistemological issues involved in this inquiry. Nonetheless, I argue that applying the theories of conceptual blending and embodied cognition to Upper Paleolithic art does raise novel issues and open up new lines of inquiry about that art, and allows us to make some educated guesses about the manner in which certain of those representations were meaningful for the people of the European Upper Paleolithic.

Like laypeople, archaeologists have long sought to understand the meanings of the images created by Ice Age peoples. Some have developed broad theories, seeking to connect great portions of the artwork to unitary explanations, such as the theories of sympathetic hunting magic, structuralism, or shamanism (Conkey 1987). I make no pretense of offering such a grand theory, nor is my approach designed to prove or disprove those theories. Instead, I see this cognitive approach as one that offers a partial explanation of specific representations, and believe it works best when coupled with investigations of the broader context in which those representations are found (e.g. Conkey 1997), as well as with technological and methodological approaches such as those based on the *chaîne opératoire* (e.g. White 1997).

It should be noted at the outset that the term õartö is problematic when used in connection with the imagery and representations of the European Upper Paleolithic. Conkey, White and others have argued that our modern concept of õartö does not accurately reflect the cosmologies and philosophies relevant to the creation of those representations; it grafts our modern conceptions on to the presumed assumptions of Ice Age peoples (Conkey 1987; Davis 1985; Dewey 1934; White 1997). However, the word is convenient and useful when taken in its broadest sense, and there is no ready substitute for it (Fritz and Tosello 2007; Lewis-Williams 2002: 41). In this dissertation I follow Merlin Donald (2006) in defining õartö very generally as õa wide class of expressive forms and media, including music, dance, theater, various multimedia categories (such as opera and cinema), painting, sculpture, aspects of the built environment, and architecture.ö By adopting that broad definition, I seek to decouple the imagery of the Ice Age from our western, modern conceptions of art.

2.   *Overview of the Dissertation*

This dissertation will focus on two features of the archaeological record of the European Ice Age. The first will be the õSorcererö image of the cave of Les Trois Frères (Ariège) in Southern France, a fascinating and complex, engraved drawing set in an intriguingly ambiguous location, deep underground. This image and many of the others in that cave are attributed to the Magdalenian culture, the last broad culture of the European Ice Age, dating to approximately 11,000 to 17,000 BP. For the purposes of this dissertation, the location and setting of the Sorcerer will be at least as important as the composition of the image itself.

The second feature considered will be the Châtelperronian artifacts of the caves of Arcy-sur-Cure (Yonne), France, and in particular animal teeth with careful incisions indicating that they were likely suspended, as pendants are today. The Châtelperronian artifacts are attributed to the Neandertals, close relatives of our own species, who lived in Europe and Western Eurasia for approximately 200,000 years before the arrival of *Homo sapiens sapiens*. One of the intriguing questions about the Châtelperronian culture is whether it is the result of encounters between the two types of hominin; problems with accurate calibration of radiocarbon dates for that time period, and ongoing debates over the symbolic abilities of Neandertals, cloud the issue.

Part I of the dissertation is a description of the two theories of cognitive science that I will be using as frameworks to evaluate the archaeological record. These two theories are *conceptual metaphor theory*, as put forth originally by George Lakoff and Mark Johnson (1980) and subsequently expanded upon by them and by many others; and *conceptual blending theory*, also known as *conceptual integration theory*, which is largely the work of Gilles Fauconnier and Mark Turner, though many other scholars have contributed to it. For the ease of reference I will typically refer to conceptual metaphor theory simply as õmetaphor theory,ö while recognizing that competing theories of metaphor do exist in linguistics and cognitive science, and I will refer to conceptual blending theory simply as õblending theory.ö

Metaphor theory is based to a great extent on the notions of *embodied cognition* and the *embodied mind*. It is important to describe those concepts not just because they are critical to metaphor theory, but also because they transcend particular cultures and therefore, I argue, can be applied universally to different time periods with significantly more epistemic confidence. For that reason this first section of the dissertation also covers the notion of *image schemas*, fundamental elements of human bodily interaction with the surrounding world.

One of the important aspects of metaphor theory is that it concerns not just words, but images as well. This is of obvious importance in connection with the issue of how earlier humans apprehended Ice Age art. For that reason my description of metaphor theory includes a description of how metaphor theory has been applied to visual imagery.

The final chapter of this first part of the dissertation is a discussion of the nature of meaning, and in particular of the work of philosopher Mark Johnson on that topic. Johnson has created a broad theory of meaning focusing on how it is constructed by the embodied mind through physical interaction with the world. I find his theory to be particularly useful in this inquiry for two reasons: first, it underlies metaphor theory and

therefore is implicated in any discussion of metaphor theory; and second, because it is susceptible to a universal application to human experience in all time periods.

In **Part II** of the dissertation I address the question of the origins of conceptual blending and metaphor in the human experience. As noted above, metaphor theory and blending theory were created to explain the cognitive functions of people today, and it would be a mistake simply to assume that they are directly applicable to the Ice Age, much less to a different kind of hominin who lived at that time. Blending theorists have claimed not just that the most advanced form of conceptual blending existed during the Upper Paleolithic of Europe, but also that it was the development of the ability to engage in that advanced form of blending that made the creations of the Upper Paleolithic ó as shown in the archaeological record ó possible. Blending theory draws upon the work of archaeologist Steven Mithen on this point, and given the striking similarities between blending theory and Mithenøs theory of õcognitive fluidity,ö I have analyzed the relationship between the two and I present that commentary in this Part of the dissertation.

Having laid the theoretical groundwork, **Part III** of the dissertation includes my application of metaphor theory and blending theory to the two archaeological subjects mentioned above, the õSorcererö of Les Trois Frères and the Neandertal pendants of the Châtelperronian industry of Arcy-sur-Cure. With regard to the Sorcerer, I begin by describing the image itself and its physical setting in the deepest chamber, far from the point of access into the cave we know as Les Trois Frères. Before analyzing the image, I return to the subject of pictorial metaphors, introduced earlier, in greater depth. I also raise some troubling epistemological issues, such as how we can determine whether the metaphors we find are those of the Ice Age peoples, or simply our own. I then attempt to utilize both metaphor theory and blending theory to identify fresh perspectives and lines of inquiry into the meaning of the Sorcerer image and the images that surround it.

Before leaving the cave of Les Trois Frères, I offer three arguments about the meaning of the imagery of that cave, based not on the Sorcerer or other images themselves, but rather on the *bodily experiences* that people would necessarily have had as they moved through the cave and physically apprehended those images. These arguments draw upon Johnsonøs and othersø work on meaning and the embodied mind, and especially on the concept of image schemas and *primary metaphors*. They are deliberately reminiscent of phenomenological approaches, though I believe that the cognitive science underlying them provides a better foundation for reliable analysis than is found with the typical phenomenological effort. Perhaps surprisingly, this type of approach may well rest on firmer epistemic underpinnings than the seemingly more straightforward application of blending or metaphor theory to the images themselves.

In the first of my three arguments I contend that the physical movement through the cave of Les Trois Frères would have been understood metaphorically as a journey, with standing under the Sorcerer image being the end point of that journey and, more importantly, with the effort involved in oneøs comprehension of that image being understood as analogous to the difficulties of a journey. Second, I apply the image schema of *cycles* or *rhythms* to the actual movement of a person through that underground space, drawing both on concepts of embodied cognition and on the work on rhythms of French archaeologist André Leroi-Gourhan. Here my claim is that the normal daily and bodily rhythms of the Magdalenian people would have been disrupted as they

moved through the underground spaces, with the result that they would have been jolted out of their default manner of apprehending the world, their minds would have been actively engaging with the experience of being in the cave, and as a result they would have created novel conceptual blends, understanding the experience in Les Trois Frères in a new way. Third, I argue that the location of the Sorcerer image inside the õSanctuaryö chamber of Les Trois Frères was intentional and was aimed at creating conceptual distance between the viewer and the Sorcerer, utilizing the primary metaphor of õIntimacy is Closeness.ö I argue that the people who created that image placed it in that precise location, on that particular panel of rock, in order to take advantage of ingrained metaphors and other conceptual blends commonly felt and understood by the people who made it and were to view it. They placed it in that location because by doing so they could manipulate the bodily interaction of those viewers in such a way as to underscore the desired meanings of the image. Visitors were not supposed to feel that they õknewö the Sorcerer well or could easily grasp its essence; on the contrary, the people who created that image chose a location that would create a barrier to intimacy or the sense of deep knowledge.

Viewing these features of the archaeological record from the framework of cognitive science, I contend, opens the door to a greater, and more science-based understanding of the physical experience of engaging with the cave environment and these images. This approach is not restricted to the archaeology of the Ice Age, but rather could be useful as part of investigations of other locations and other time periods.

Having made those arguments about the Sorcerer and the cave of Les Trois Frères, I move back in time to the Neandertal-modern human transition, and northward to the caves of Arcy-sur-Cure, and attempt to apply metaphor and blending theories to the artifacts created by Neandertals at that site over 30,000 years ago. I begin with a brief sketch of some aspects of what we know about the Neandertals and the world in which they lived, including the archaeological sites they left us, their mobility and seasonality, and their relationship to our species. I then discuss the õTransitionö period during which both Neandertals and anatomically modern humans occupied Europe, and in particular the Châtelperronian artifacts that were, to our current knowledge, created by Neandertals during that time period.

My analysis of that time period centers on the notion of human identity. I begin by describing how blending theory approaches questions of identity, placing that analysis in the context of the õcontainerö image schema. That is, I suggest that identity may be understood by seeing oneøs identity as a container into which elements can be added and from which elements can be removed. I then offer a summary of culture contact theory as utilized in archaeology today, and discuss the strengths and weaknesses of applying that theory to the presumed contact between Neandertals and modern humans during the European Ice Age. Having laid that groundwork, I proceed to apply blending analysis to the contact between Neandertals and modern humans at Arcy-sur-Cure, and in particular as it is manifest in the Neandertal material culture of pendants made from animal teeth. Applying blending theory to a specific instance of culture contact, and thereby breaking down that contact situation into the elements of a blending theory diagram, raises interesting issues about both human and Neandertal comprehension, beliefs, and understandings. It brings into focus the shortcomings in the commonly-held view that Neandertals were unable to comprehend the symbolic elements of modern human

material culture, and imitated it without truly understanding its meaning. My analysis leads me to question whether imitation without understanding is in fact possible, whether imitation of that type could have been performed without an appreciation, if not of the *specific* meanings the modern humans had, at least of the symbolic importance of the artifacts. That conclusion in turn has serious implications for assumptions about Neandertal symbolic capabilities.

PART I

CONCEPTUAL METAPHOR THEORY AND CONCEPTUAL INTEGRATION THEORY

CHAPTER 1
Conceptual Metaphor Theory

1.   *The Traditional Theory of Metaphor*

Traditionally, metaphors have been considered to be unusual twists of language, not part of standard human comprehension of the world. In this view, õa metaphor is an elliptical simile useful for stylistic, rhetorical, and didactic purposes, but which can be translated into a literal paraphrase without any loss of cognitive contentö (Johnson 1981: 4). Stated differently, õthe ability to think, imagine, and speak poetically has historically been seen as a special human trait, requiring different cognitive and linguistic skills than those employed in ordinary lifeö (Gibbs 1994). Metaphors were thus seen as useful for illustrating concepts such as life and death in poetry, as in Robert Frostøs õ*The Road Not Taken*ö:

> Two roads diverged in a wood, and I ó
> I took the one less traveled by,
> And that has made all the difference.

or Dylan Thomasøpoem *"Do Not Go Gentle Into That Good Night"*:

> Do not go gentle into that good night,
> Old age should burn and rave at the close of day;
> Rage, rage against the dying of the light . . .

2.   *The Contemporary Theory of Metaphor*

The modern view of metaphor does not dispute that metaphors are commonly used in poetry or for stylistic purposes. However, metaphors are now seen as part of normal speech and cognition. This modern view is referred to as Conceptual Metaphor Theory.

According to Conceptual Metaphor Theory, the essence of metaphor is understanding and experiencing one kind of thing in terms of another (Lakoff and Johnson 1980). Metaphors work by mapping from a *source domain* to a *target domain* (Lakoff 1993a), with the source domain being a more readily understood area of human experience and the target domain being the concept that the speaker/writer is attempting to explain. õThe target domains are abstract conceptual domains, frequently of the internal mental and emotional world or unseen and unknown domains of the physical worldö (Tilley 1999). For example, in modern English we find the following metaphors:

Affection is Warmth:
Example: "They greeted me *warmly*."

Difficulties are Burdens:
Example: "She's *weighed down* by responsibilities."

Understanding is Grasping:
Example: "I've never been able to *grasp* transfinite numbers."

More is Up:
Example: "Prices are *high*."

(Lakoff and Johnson 1999).

The point here is that metaphors are not simply used in poetry and lyrics; rather, they are part of language and the conceptual system we use every day. Raymond Gibbs argues that:

> Human cognition is fundamentally shaped by various poetic or figurative processes. Metaphor, metonymy, irony, and other tropes are not linguistic distortions of literal mental thought but constitute basic schemes by which people conceptualize their experience and the external world (Gibbs 1994: 1).

> People conceptualize their experiences in figurative terms via metaphor, metonymy, irony, oxymoron, and so on, and these principles underlie the way we think, reason, and imagine (Gibbs 1994: 5).

The more abstract, difficult or complex a notion is, the more necessary it becomes for humans to conceive of it in metaphorical terms (Gibbs 1994). Lewis-Williams (2002) provides a good example, stating that descriptions of the human *brain* can be fairly literal, but once we move on to describe the human *mind* or consciousness we resort to various metaphors, such as the "mind as blank slate," "mind as sponge," or "mind as computer." While descriptions of the world may or may not be metaphorical, interpretations of the world almost inevitably are (Tilley 1999). Lakoff and Johnson (1999) make the point simply: "Abstract concepts are largely metaphorical."

3. The Contemporary Theory of Metaphor Updated:
    The Neural Theory of Metaphor

In a recent book section, Lakoff (2008) has updated metaphor theory, drawing upon recent research into the operation of the human brain. He refers to this update as the *neural theory of metaphor*. The update is a result of work by the Neural Theory of Language group at UC Berkeley, and more specifically of Lakoff's collaboration with Jerome Feldman (see also Feldman 2006).

The neural theory of metaphor focuses on *neural bindings*, connections between concepts that are responsible for "different conceptual or perceptual entities being considered a single entity" (Lakoff 2008: 20). This theory goes a long way towards explaining the biological basis of image schemas and metaphors that are based on physical experience. It also provides a foundation for Lakoff (2008: 30, 36) to argue that metaphors and conceptual blends (described below) are different on a neural level, and "why blends do not do the job of metaphors." What is important for this dissertation is that the updated theory does not undermine, but rather underscores the appropriateness of, and expands our understanding of the basis of, the earlier key ideas of conceptual metaphor theory, e.g. metaphors are conceptual mappings and not just linguistic expressions; certain metaphors are grounded by means of correlations in bodily experience; and source domain structures (image schemas and frame structures) are used for reasoning about target domains (Lakoff 2008: 24-25).

4.   *Visual and Physical Metaphors*

The easiest place to recognize metaphors is in language. However, human conceptual understanding of experience can also be expressed in physical and visual form, such as in pictures, sculptures, and gestures.

Consider the picture shown in Figure 1, which is an advertisement for a cable television channel's presentation of the 2004 Tour de France. Here the picture and the words work together in projecting notions of force and high-speed action into our concept of what the upcoming Tour will be like. In particular, the word "Cyclysm" appears to be intended to cause the viewer to understand this bike race as some sort of cataclysm.[1]
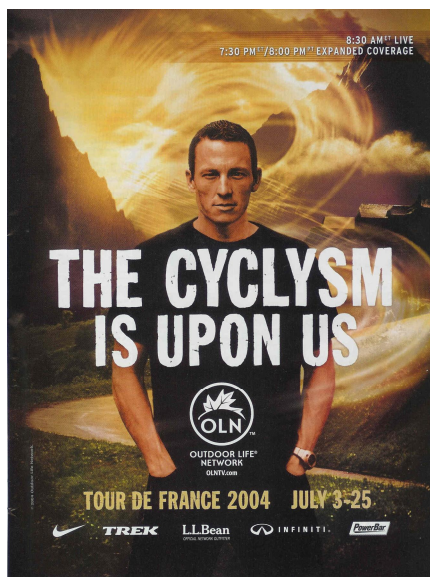
Figure 1.
Tour de France Coverage Advertisement

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[1] The advertisement was intended for American audiences, and therefore the similarity between the word "cyclysm" and the French word "cyclisme" (cycling) would be noticed by relatively few people, and was unlikely to be central to the intent of the cable channel's marketing department.

Cartoons can also be analyzed as metaphors and blends (Rohrer 2004).

Or consider the renaissance painting *La Tempesta*, by Giorgione (Figure 2). Little is known about the painter or the painting itself. One interpretation of this enigmatic image is that it metaphorically depicts an impending social or political tempest that will engulf and transform the bucolic lifestyle of medieval Italy. Of course, many other interpretations are also possible (Settis 1978).

Figure 2.
La Tempesta, by Giorgione.

Núñez and Sweetser (2006) have provided us with a fascinating study of a metaphor expressed in gestures. In our culture (and in many others), people conceive of time spatially, and understand the future to be ahead of us while the past is behind us (Lakoff and Johnson 1999: 137). For example we might say that õthose tough days are behind us,ö referring to experiences in the past. By contrast, the Aymara speaking people of the Andean highlands of Bolivia conceive of the past as being in *front* of them, and the future *behind* them. When these people speak of the past or future, their speech is sometimes accompanied by gestures forward or backward, depicting the past or future, respectively. The gestures help express the underlying metaphorical conception of the direction in which the past and future exist relative to the speaker[2] (see also Cienki and Müller 2008; Slingerland 2008: 173).

Compared to the amount of research that has been done on metaphor usage in language, very little has been carried out on visual metaphors. Tilley (1999) conducted in-depth analyses of a selection of õsolidö metaphors, metaphors displayed in material culture, but did not attempt to present a macro-level overview or categorical description of how they work.

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[2] In this context, consider also the commonplace handshake or embrace, through which the relationship between two people is understood or underscored through a physical connection. The closer physical relationship of an embrace commonly signifies a closer social or emotional bond than does a handshake.

Forceville has made such an attempt. He seeks to understand how õpictorialö and õmultimodalö metaphors work, and to categorize them accordingly (Forceville 2008). He notes that:

> Clearly, if metaphors are essential to thinking, it makes sense that they should occur not only in language but also in static and moving pictures, sounds, music, gestures, even in touch and smell ó and in their various permutations. It is a shortcoming of conceptual metaphor theory (CMT), however, that it has hitherto largely ignored non-verbal metaphors such as those just mentioned.

He defines õmultimodalö metaphors as those õin which target, source, and/or mappable features are represented or suggested by at least two different sign systems (one of which may be language) or modes of perceptionö (Forceville 2008: 463). Advertisements typically fit this description, in that they combine pictures with words, the entire ensemble suggesting the intended metaphor.

Forcevilleøs typology of pictorial metaphors is useful for the application of metaphor and blending theory to Paleolithic representations, and will be discussed more fully below in relation to the images of Les Trois Frères (Ariège). He divides pictorial metaphors into the following categories (Forceville 2008: 464-469):

➢ Contextual Metaphors: where an object is metaphorized because of the visual context in which it is placed.
➢ Hybrid Metaphors: Two objects that are normally distinct entities are physically merged into a single õgestalt.ö
➢ Pictorial Similes: Two objects are represented in their entirety in such a way that they are made to look similar. The techniques available to cue this similarity are manifold: similarity in form, position, color, lighting, function, and so on.
➢ Integrated Metaphors: A phenomenon experienced as a unified object or gestalt is represented in its entirety in such a manner that it resembles another object or gestalt even without contextual cues.

Forcevilleøs õHybrid Metaphorö is similar to Carrolløs (1994) earlier view of how visual metaphors work. For Carroll, a visual metaphor is:

> A visual image in which physically noncompossible elements belong to a homospatially unified figure which, in turn, encourages viewers to explore mappings between the relevant constituent elements and/or the categories or concepts to which they allude.

This is not to say that all images made up of õphysically noncompossible elementsö are in fact metaphors. Carroll notes that a õlizard-manö may not exist in our world, but in a science fiction horror film they may be considered possible. He states:

In order to interpret such figures metaphorically, we must
at least have grounds to believe that the image-maker is
presenting them as physically noncompossible entities and
not as physically possible entities in some fantastic-
fictional world that is ruled by laws different from our own.

This analysis therefore could apply equally well to societies with ontologies different
than our own.

5.   *Cross-Cultural Studies of Metaphor*

The Núñez and Sweetser article is also an example of another principle critical to
this inquiry: metaphorical thought is not simply a function of the English language as
spoken today, but rather is common throughout the peoples of the world and extends
back into human history.

Analyses of metaphor usage have been conducted in connection with many
different languages, and metaphor usage has been found in all of them. The languages
surveyed and compared against each other include English and Persian (Talebinejad and
Dastjerdi 2005); English and Malay (Charteris-Black 2003); various Andean languages
(Columbus 2006); English and Hungarian (Kövecses 2003); English as interpreted by
Bangladeshi students (Littlemore 2003); Spanish and English (MacArthur 2005); English
and Turkish (Ozcaliskan 2007); the folklore of the Kalahari Ju/'hoan people (Biesele
1993); the Nakaya people of India (Bird-David 1990); Chinese (Pritzker 2007); English
and Chinese (Yu 1998); English, Mandarin, Hindi and Sesotho (Alverson 1994); Basque
(Ibarretxe-Antuñano 1999); Japanese (Hiraga 1999); and Arabic (Abdulmoneim 2006).
Some of these languages are typologically different from English and from each other.
Inasmuch as all of these languages contain significant metaphorical usage, there can be
little doubt that metaphorical thinking and conceptual blending are common to people
throughout the world today.

There is also clear evidence that metaphor usage was common in cultures existing
earlier in human history. Slingerland (2005) has documented metaphor usage and
conceptual blending in a text written in an ancient (4th century BCE) Sino-Tibetan
language completely unrelated to modern Indo-European languages. Wiseman (2007)
has analyzed some of the metaphors used in ancient Rome and in particular in the oratory
of Cicero, and he comments that the poets who composed the great epics of preliterate
societies ó the Odyssey, the Mahabharata and Vedas in India, and Gilgamesh of
Mesopotamia ó described their art metaphorically as õstitchingö or õsewing.ö More
research will expand our knowledge of early historic metaphorical thinking, but from
these works it is reasonable to conclude that metaphor usage and conceptual blending
have existed throughout the world for thousands of years.

However, to say that conceptual blending and metaphorical thought exist
throughout todayøs world and have existed for thousands of years does not demonstrate
that humans utilized metaphor and blending during the time period at issue in this
dissertation, the European Ice Age. Nor is it sufficient to provide us with any sort of
predictive methodology suitable for applying metaphor and blending analysis to the
symbolic activities of Ice Age humans. If metaphorical usage varies throughout todayøs

world, what metaphor-based analysis might we dare apply to the symbolic activities of people who lived 15,000 or 30,000 years ago? How do we achieve any sort of certainty that the blends we see in their activities are *their* blends, not blends that we read into their work due to our own cultures and our 21st century understandings of the world?

To have a better idea of how we might apply metaphor or blending theory to the European Upper Paleolithic, we need to consider the result of recent research into precisely which types of metaphors seem to be universal throughout human societies. More particularly, we need to see whether there are any types of metaphors/blends that people throughout the world today use *because of some aspect of human life that is common to all members of our species*. If there are blends or metaphors that extend across the multivariate cultures in the world today, and if those blends or metaphors are based on something that also existed in deep time, then perhaps we can say with an acceptable level of certainty that the blends and metaphors we use to understand Ice Age symbolic activities they are indeed blends that the people of that time may have used.[3]

Kövecses' (2002) overview of metaphor theory contains a very useful discussion of both the universality of metaphor across languages and cultures, and variation in metaphor not just between cultures but within individual cultures. He focuses on the specific case of the CONTAINER metaphor for anger, namely the metaphor that ANGER IS A HOT FLUID IN A CONTAINER. There are multiple variations of this metaphor in English, including:

> You make my blood boil.
> Simmer down!
> Let him stew.
> Billy's just blowing off steam.

Kövecses demonstrates that variations of this metaphor exist not just in English, but also in Hungarian, Japanese, Chinese, Zulu, Polish, Wolof and Tahitian. He proposes (Kövecses 2002: 177) that:

> We showed in the case of ANGER IS A
> PRESSURIZED CONTAINER that the universality of this
> metaphor can be found at the generic level. Anger seems to
> be conceptualized in a variety of unrelated languages as
> some kind of internal pressure inside a container.
> The hypothetical universality of the
> PRESSURIZED CONTAINER metaphor for anger and its
> counterparts appears to derive from certain universal
> aspects of *human physiology*. When a metaphorical
> concept has such an experiential basis, it can be said to be
> *embodied*. However, not all metaphorical concepts have
> such clear *bodily motivation* (in the sense of physiological)

---

[3] An additional issue is the point(s) during human evolution and societal development that blending and metaphor came into use. At some point during the development of our species we developed the ability to blend and use metaphor. For this analysis we need to gain some comfort that that time was prior to the European Ice Age. This issue is discussed below, at page 47.

as in the case of the PRESSURIZED CONTAINER
metaphor for anger. It can be suggested that there are other
kinds of correlations in experience that can motivate other
metaphors, including perceptual, cultural, category-based,
etc. correlations. We saw that the Event Structure
metaphor may also be motivated by correlations in
experience, which can be viewed as metonymic in
character. The universality of such metonymic correlations
may explain the universality of many conceptual
metaphors.

Some metaphorical understandings, in this view, arise from embodied understandings of
the world.

Just as important as the finding that certain metaphors appear to be universal is
the finding that even where a basic metaphor is universal, there is cultural variation in
how that metaphor is elaborated. The metaphor discussed above ó ANGER IS A
PRESSURIZED CONTAINER ó exists in English, Zulu, and Japanese, but is expressed
differently in each culture. In Japanese, there are many anger-related expressions that
group around the concept of *hara,* which literally means õbelly.ö In Zulu, anger is
understood as being in the heart. Kövecses (2002: 186) concludes, not surprisingly, that
the õbroader cultural contextö of a language is one cause of cultural variation in metaphor
and metonymy.

Another cause of variation in how universal metaphors are expressed differently
is, according to Kövecses (Kövecses 2002: 187), the natural and physical environment in
which speakers of a language live:

Given a certain kind of habitat, speakers living there will be
attuned (mostly subconsciously) to things and phenomena
that are characteristic of that habitat; and they will make
use of these things and phenomena for the metaphorical
comprehension and creation of their conceptual universe.

He cites the example of Dutch and its derivative language Afrikaans, studied by Dirven,
(1993). Although both Dutch and Afrikaans have many metaphors based on nature,

A curious feature of Dutch nature metaphors is that they
almost completely lack metaphors based on animals. In
contrast to this relatively calm and serene natural
atmosphere, he finds metaphors in new, Afrikaans Dutch
that are based on both animals of various kinds and forceful
images of nature.

This finding may be significant for a study of the metaphors of the European Ice Age.
We should expect that people of that time period would have used many metaphors based
on their observations of animals, with which they lived in close contact, and by their
steppe environment, which certainly dictated many of their actions and movements.

6.   *Embodied Cognition, Image Schemas and Sensory-Motor Basis of Primary Metaphors*

Kövecsesø suggestion that universal metaphors arise from universal aspects of human physiology is, I believe, the key to finding elements of metaphor theory that can be applied to the Upper Paleolithic with some degree of confidence.   There is a specific type of metaphor ó primary metaphors ó that is very likely to be found in a wide variety of languages and conceptual systems, because they are based on human physical interaction with the world on a level that not only has not changed since the time of Ice Age hunter-gatherers, but actually predates it. This makes it plausible that the people of the Ice Age may also have used these metaphors.

In order to describe primary metaphor theory, we must first examine the notion of image schemas that are said to underlie primary metaphors, but before we discuss image schemas, it is necessary to consider more generally the notion that cognition is embodied. I shall proceed in that order.

My approach to this subject draws heavily on recent works of õembodied philosophy,ö most importantly Lakoff and Johnsonøs *Philosophy in the Flesh* (Lakoff and Johnson 1999) and Johnsonøs works *The Body in the Mind, The Bodily Basis of Meaning, Imagination, and Reason* (Johnson 1987) and *The Meaning of the Body, Aesthetics of Human Understanding* (Johnson 2007). In those books Lakoff and Johnson seek to reevaluate many of the basic tenets of Western philosophy in light of the findings of modern cognitive science, most importantly conceptual metaphor theory. In *Philosophy in the Flesh*, they investigated the implications for philosophy of three related contentions: (1) the mind is inherently embodied; (2) thought is mostly unconscious; and (3) abstract concepts are largely metaphorical (Lakoff and Johnson 1999: 1). In *The Body in the Mind*, Johnson focused on how the construction of meaning is influenced by image schemas and metaphorical conceptions.

What is embodied cognition? To say the mind is embodied, according to Lakoff and Johnson, is not merely to say that a body is needed if we are to think. Rather, their contention is that õthe very properties of concepts are created as a result of the way the brain and body are structured and the way they function in interpersonal relations and in the physical worldö (Lakoff and Johnson 1999: 37). Human sensorimotor systems play a major role in structuring color concepts, basic-level concepts, spatial-relations concepts, and aspectual (event-structuring) concepts (Lakoff and Johnson 1999: 16). We categorize objects in the outside world in accordance with our perceptual abilities and how we function physically in the world (Lakoff and Johnson 1999: 18). Once humans have learned a conceptual system, it is õneurally instantiated in our brains and we are not free to think just anythingö (Lakoff and Johnson 1999: 5).

Perhaps most important for this study of the European Ice Age are Lakoff and Johnsonøs comments (1999: 30) on the embodied nature of *spatial-relations* concepts, which they consider to be õat the heart of our conceptual system.ö Our spatial relations concepts, and the metaphorical understandings built upon them, are based largely on our bodily interactions with the world around us. These concepts tend to be cross-linguistic õbecause they are motivated by correlations which are so fundamental and inescapable that they do not vary from culture to cultureö (Grady 2005b: 1600).

A key spatial-relations concept within the theory of embodied cognition is the image schema. As Johnson (2005) has recounted, the term image schema first appeared in 1987 in his book *The Body in the Mind* (Johnson 1987) and George Lakoff's book *Women, Fire, and Dangerous Things* (Lakoff 1987). The two had previously collaborated on cognitive studies and had co-authored *Metaphors We Live By* (Lakoff and Johnson 1980). Image schemas were, and remain, a key part of their explanation of the embodied origins of human meaning and thought (Johnson 2005).

Lakoff and Johnson use the term image schema to mean "a dynamic pattern that functions somewhat like the abstract structure of an image, and thereby connects up a vast range of different experiences that manifest this same recurring structure" (Johnson 1987: 2), or "a recurring, dynamic pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience" (Johnson 1987: xiv). Lakoff (1987: 271) referred to them as "basic experiential structures" that are present "prior to, and independent of, any concepts," though they might then be further structured by those concepts. Johnson (1987: 23) noted that they "are not rich concrete images or mental pictures."

To understand the term image schema, it is helpful to begin with an example of the different levels of generality at which one might describe an object. Consider first a *triangle* drawn on a set of building plans. We can describe that particular triangle in great detail: the length of its sides, the degrees of its three angles, its planned location in a larger structure, its structural significance, etc. Then think of a different triangle, one drawn on a geometry test, about which questions are posed. Here too we could describe the triangle's attributes in detail, and those attributes would likely be different than those of the first triangle. Each is quite different from the other, yet the fact that we can recognize both of them as "triangles" indicates that there is a concept of a "triangle" that is more general than the description of either of the particular triangles.

There is a spectrum of generality of human understanding, along which various descriptions of an object might lie. On one end of the spectrum lie abstract propositions, while on the other end we find particular concrete images. Image schemas lie between those two poles. They are more general than a particular image of a discrete object, and apply more generally to many objects of that type, notwithstanding the fact that no two objects of that type are exactly the same. As Johnson (1987: 24) writes, they "have a generality that raises them a level above the specificity of particular rich images."

Not only is an image schema a concept of that middle level of generality, it is also one that is based on the interaction of our bodies with the world around us. Johnson (1987: 2) describes it as "a dynamic pattern that functions somewhat like the abstract structure of an image, and thereby connects up a vast range of different experiences that manifest this same recurring structure." Later, he defines them as "recurring structures of, or in, our perceptual interactions, bodily experiences, and cognitive operations" (Johnson 1987: 79). They play a key role in our comprehension of the world and therefore in how we create meaning:

> In order for us to have meaningful, connected experiences
> that we can comprehend and reason about, there must be
> pattern and order to our actions, perceptions, and
> conceptions. A schema is a recurrent pattern, shape, and

regularity in, or of, these ongoing ordering activities.
These patterns emerge as meaningful structures for us
chiefly at the level of our bodily movements through space,
our manipulation of objects, and our perceptual interactions
(Johnson 1987: 29).

Image schemas arise from our embodied interactions with the world, are independent of culture, and are thus common to people of all cultures.

Johnson (2007: 144) summarizes his conception of image schemas as follows:

➢ Recurrent, stable patterns of sensorimotor experience;
➢ õimageö-like, in that they preserve the topological structure of the perceptual whole;
➢ operating dynamically in and across time;
➢ at once õbodilyö *and* õmentalö;
➢ predicated on interaction with a wider environment;
➢ realized as activation patterns (or õcontoursö) in topologic neural maps;
➢ structures that link sensorimotor experiences to conceptualization and language; and
➢ having internal structures that give rise to constrained inferences.

Hampe (2005b: 1-2) summarized the definition of image schemas in the following terms:

➢ Image schemas are *directly meaningful* (õexperientialö/ õembodiedö), *preconceptual* structures, which arise from, or are grounded in, human recurrent bodily movements through space, perceptual interactions, and ways of manipulating objects.

➢ Image schemas are highly *schematic* gestalts which capture the structural *contours* of sensory-motor experience, integrating information from multiple modalities.

➢ Image schemas exist as *continuous* and *analogue* patterns *beneath* conscious awareness, prior to and independently of other concepts.

➢ As gestalts, image schemas are both *internally structured*, i.e., made up of very few related parts, and highly *flexible*. This flexibility becomes manifest in the numerous transformations they undergo in various experiential contexts, all of which are closely related to perceptual (gestalt) principles.

Rohrer (2005: 173) offers the following as characteristics of image schemas; they:

- ➢ Are recurrent patterns of bodily experience;
- ➢ Are õimageö-like in that they preserve the topological structure of the whole perceptual experience;
- ➢ Operate dynamically in and across time;
- ➢ Are structures which link sensorimotor experience to conceptualization and language;
- ➢ Are likely instantiated as activation patterns (or õcontoursö) in topological and topographic neural maps;
- ➢ Afford õnormalö pattern completions that can serve as a basis for inference.

Efforts are still underway to refine the definition of image schemas (Grady 2005a; Hampe 2005a).

Johnson (1987: 126) provided the following list of common image schemas:

Container
Blockage
Enablement
Path
Cycle
Part-whole
Full-empty
Iteration
Surface
Balance
Counterforce
Attraction
Link
Near-far
Merging
Matching
Contact
Object
Compulsion
Restraint Removal
Mass-Count
Center-Periphery
Scale
Splitting
Superimposition
Process
Collection

See also Cienki (1997).

The classic example of an image schema is the notion of a container, consisting of a boundary distinguishing an interior from an exterior, and which defines the basic

distinction between õinö and õoutö (Lakoff 1987: 271). During our daily lives we constantly experience entering and exiting from defined areas, and that basic, common experience is then projected metaphorically to many other aspects of our lives. In that manner we come to understand much of our world in terms of this CONTAINER schema, as Johnson (1987: 30-31) describes:

> Consider just a small fraction of the orientational feats you perform constantly and unconsciously in your daily activities. Consider, for example, only a few of the many *in-out* orientations that might occur in the first few minutes of an ordinary day. You wake *out* of a deep sleep and peer *out* from beneath the covers *into* your room. You gradually emerge *out* of your stupor, pull yourself *out* from under the covers, climb *into* your robe, stretch *out* your limbs, and walk in a daze *out* of the bedroom and *into* the bathroom. You look *in* the mirror and see your face staring *out* at you. You reach into the medicine cabinet, take *out* the toothpaste, squeeze *out* some toothpaste, put the toothbrush *into* your mouth, brush your teeth *in* a hurry, and rinse *out* your mouth. At breakfast you perform a host of further *in-out* moves ó pouring *out* the coffee, setting *out* the dishes, putting the toast *in* the toaster, spreading *out* the jam on the toast, and on and on. Once you are more awake you might even get lost *in* the newspaper, might enter *into* a conversation, which leads to your speaking *out* on some topic.

Another standard example of an image schema is SOURCE-PATH-GOAL. In the course of our lives, we constantly move from one location to another. Each such movement consists of a starting place, a destination or goal, and multiple points in between. To get from the starting point to the ending point, you must pass many points along the way. This basic, physical movement is then projected metaphorically such that purposes are understood in terms of destinations, and achieving a purpose is understood as passing along a path from a starting point to an end point (Lakoff 1987: 275).

Consider also the UP-DOWN image schema. In the course of many common daily activities we experience the correlation between quantity and verticality. If you pour water into a glass, the addition of water corresponds to an increase in the level of water in the glass. If you pile anthropology journals on a desk, the pile becomes higher the more you add. We come to understand that õMoreö is õUp,ö and we then extrapolate this concept to other areas of life, such as when we say that õprices rose last yearö or õstocks plummeted yesterdayö (Johnson 1987; Lakoff and Johnson 1999).

The BALANCE schema is also interesting as a basis for our understanding of the world. When we say that õthe author took a *balanced* approach to the subject of Iraq,ö we have projected from our sensorimotor perceptions of physical balance (such as not leaning in one direction or the other) to an abstract notion of balance somewhat akin to fairness (see Johnson 1987: 80).

The key point for this inquiry is that image schemas, being the product of human bodily interaction with the surrounding world, should also have been shared by the peoples of the Ice Age. To the extent we can understand how image schemas are projected metaphorically today, we can begin to develop the methodology that will allow us to interpret Ice Age symbolic activities from a metaphor perspective. This is not to say that image schemas provide õthe whole storyö in that they can explain all aspects of complex phenomena. Surely that is not the case (Johnson 2005; Kimmel 2005; Quinn 1991).

Image schemas, and the sensory-motor experiences on which they are based, are the basis for a specific type of metaphor known as primary metaphors (Boers 2003; Grady 1997). Primary metaphors are metaphors that arise from and are based upon physical movements and relationships that all people of our species engage in or encounter on a regular basis. They are based on those õfundamental dimensions of experienceö (Grady 2005b). They are traced to õcorrelations (consistent co-occurrence) in experienceö between source and target domains (Boers 2003: 233; Grady 2005b: 1602). They are simple metaphors that can either be the basis of human understanding in their own right (as the examples above show), or they can be combined into more complex metaphors just as atoms can be combined to form molecules (Lakoff and Johnson 1999: 49).

Lakoff and Johnson (1999) provide a lengthy list of primary metaphors, which includes:

Affection Is Warmth
Important Is Big
Happy Is Up
Intimacy Is Closeness
Bad Is Stinky
Difficulties Are Burdens
More Is Up
Categories Are Containers
Similarity Is Closeness
Linear Scales Are Paths
Organization Is Physical Structure
Help Is Support
Time Is Motion
States Are Locations
Change Is Motion
Actions Are Self-Propelled Motions
Purposes Are Destinations
Purposes Are Desired Objects
Causes Are Physical Forces
Relationships Are Enclosures
Control Is Up
Knowing Is Seeing

Understanding is Grasping
Seeing Is Touching[4]

Because they are based on the physical experience that all people have with the world, primary metaphors are very likely to be shared by people throughout the world (Boers 2003). Grady (2005b) has stated that primary metaphors:

> tend to be cross-linguistic because they are motivated by correlations which are so fundamental and inescapable that they do not vary from culture to culture ó no cultural knowledge is required in order to associate temperature and feeling, or weight and difficulty, etc.

Further study is likely to demonstrate that primary metaphors are õnearly universalö (Grady 2005b: 1610). Lakoff and Johnson (1999: 59) describe the situation as follows:

> We have a system of primary metaphors simply because we have the bodies and brains we have and because we live in the world we live in, where intimacy does tend to correlate significantly with proximity, affection with warmth, and achieving purposes with reaching destinations.

> We have no choice in this process. When the embodied experiences in the world are universal, then the corresponding primary metaphors are universally acquired. This explains the widespread occurrence around the world of a great many primary metaphors (Lakoff and Johnson 1999: 56).

As the foregoing passage implies, this does not mean that *every* primary metaphor is used by every culture throughout the world, nor does it mean that metaphors are used in the same way throughout the world. It means that there is a significant likelihood that such universality will exist:

> There are other languages in which MORE IS UP and LESS IS DOWN, but none in which the reverse is true, where MORE IS DOWN and LESS IS UP. Why not? Contemporary theory postulates that the MORE IS UP metaphor is *grounded in experience* ó in the common experiences of pouring more fluid into a container and seeing the level go up, or adding more things to a pile and seeing the pile get higher. These are thoroughly pervasive experiences; we encounter them every day of our lives.

---

[4] In Lakoff and Johnsonøs notation system, the target domain is in the subject/first position, and the source domain is listed second (Lakoff and Johnson 1999).

. . . .
Experiential bases motivate metaphors, they do not
predict them. Thus, not every language has a MORE IS UP
metaphor, though all human beings experience a
correspondence between MORE and UP. What this
experiential basis does predict is that no language will have
the opposite metaphor LESS IS UP. It also predicts that a
speaker of a language without that metaphor will be able to
learn it much more easily than its reverse (Lakoff 1993b).

Sweetser (2004) expresses this idea succinctly as follows:

What does seem reasonable to say is that the more
universal the experiential correlation on which a
metaphorical mapping is based, the more likely the
metaphor is to be universal.

By contrast, complex metaphors are more likely to be culture-dependent and thus to vary
from place to place and through time (Boers 2003: 233-234; Deignan 2003; Kövecses
2003).

It is logical to predict that these same primary metaphors were a basis of many of
the understandings that Ice Age peoples had of their world. The human body at that time,
including the human brain, was no different than the human body/brain today, and the
physical relationships between objects at that time were no different than they are today.
For example, people today utilize the metaphor õMORE is UP,ö and it is likely that at
least some of the peoples of Ice Age Europe also used that metaphor.

To summarize, from the foregoing discussion we can see that many metaphors are
based upon common physical relationships and the manner in which people physically
move through their environment. They are created through and founded upon our
embodied cognition. Embodied concepts such as these are part of how humans
understand the world around them, and, as we shall see below, how they ascribe meaning
to events and actions. I shall return to the concepts of image schemas and primary
metaphors in connection with my case studies.

7.   *Metaphor Analysis Used in Archaeology*

With increasing frequency, archaeologists are applying various types of metaphor
theory to the archaeological record in order to gain insight into the lives of past peoples.
As early as 1992 Randall White (1992) applied conceptual metaphor theory to Paleolithic
art. White (1992: 542) noted that if metaphor pervades not just language but also thought
and action, then there should be material metaphors that are both observable today and
detectable in the archaeological record. He observed that in the domain of personal
adornment, õparts of animals or plants are used to associate the wearer with the qualities
of the whole organismö (White 1992: 542), and that õanimals of great cosmological value
or power are often used in the construction and communication of social identitiesö
(White 1992: 543).

In 1999, Christopher Tilley (1999) published an entire book on the topic of metaphor, entitled *"Metaphor and Material Culture."* Tilley provides an in-depth discussion of metaphor theory, including its application to objects, and then provides case studies of megaliths, Wala canoes, and rock art found in Sweden.

An interesting article is Scott Ortman's 2000 work entitled *"Conceptual Metaphor in the Archaeological Record: Methods and an Example from the American Southwest"* (Ortman 2000). Ortman recognized that utilizing metaphor theory in archaeology poses significant methodological problems. Nonetheless he sought to explore a possible metaphorical connection between textiles and pottery in the Great Pueblo Period (A.D. 1060-1280) of the Mesa Verde area. His hypothesis was that the stylistic unity between these two media õderived from projection of the conceptual structure of textiles onto pottery surfacesö (Ortman 2000: 620). That is, he sought to test whether these people utilized the metaphor *pottery* is a *textile*. He concluded that this metaphor was utilized by those people and, perhaps more importantly, that this fact is õdecipherable from archaeological remains alone, without the benefit of native consultantsö (Ortman 2000: 637). Ortman, unlike the other archaeologists who have applied metaphor theory, also drew upon Fauconnier and Turner's conceptual blending analysis, discussed below in Chapter 2. *See also* Mike Williams' (2003) article *Growing metaphors,* which deals with the agricultural cycle becoming the principal organizational metaphor in later prehistory; Emory Sekaquaptewa's and Dorothy Washburn's (2004) *They Go Along Singing: Reconstructing the Hopi Past From Ritual Metaphors in Song and Image,* an analysis of Hopi ritual songs; Joanna Brück's (2004) *Material metaphors, the relational construction of identity in Early Bronze Age burials in Ireland and Britain,* an exploration of õhow artifacts were used to comment metaphorically on interpersonal relationships and on the changes to these brought about by deathö (Brück 2004: 308); and Gloria Ferrari's (2006) *Architectural Space as Metaphor in the Greek Sanctuary.*

CHAPTER 2
Conceptual Integration (Blending) Theory

1.   The Basics of Conceptual Blending

      Conceptual integration, also known as conceptual blending, is a theory of human cognition that has been developed over the last fifteen years. Its main proponents and developers have been Gilles Fauconnier, Professor of Cognitive Science at the University of California, San Diego, and Mark Turner, currently Dean of Arts and Sciences at Case Western Reserve University in Ohio, although many other scholars have utilized and further developed this theory in connection with a wide variety of investigations (Coulson 2001; Coulson and Oakley 2000; Fauconnier and Turner 2002; Grady 2005b; Hutchins 2005; Sweetser 2000; Turner 2006a). The core notion of conceptual integration theory (sometimes referred to as õCITö) is that many types of human thought consist of the integration or blending of *mental spaces*, and that the ability to perform certain types of conceptual blends is what distinguishes humans from other animals, and modern human cognition from earlier forms of hominin cognition.

      To understand this theory, it is helpful first to define some key terms. The most important definitions for our purposes are the following (Fauconnier and Turner 2002: 102-03):

> Mental Spaces: these are small conceptual packets constructed as we think and talk, for purposes of local understanding and action. They are modified as thought and discourse unfolds, but can also become entrenched in long term memory. They are structured by frames and cognitive models.
>
> Input Spaces or Inputs: mental spaces that are used as *inputs* to a conceptual blend.
>
> Generic Space: this space contains what the input spaces have in common. Elements in the generic space map on to their counterparts in the input spaces.
>
> Frames: long term schematic structure ó things we õalready know aboutö ó to which mental spaces are connected and which organize mental spaces.
>
> The Blend: this is also a mental space, but it is the one created by projections from the input spaces. Projection from the input spaces is selective, i.e. not all elements of the input spaces are projected into the blend, and in fact there are quite strong constraints on projections from the input spaces into the blend.
>
> Emergent Structure: structure that is not in the input spaces. It is generated through composition (the putting together of elements that are not in the input spaces), completion (the bringing of additional structure to the blend, e.g. in completing a pattern), or elaboration (the õrunningö of the blend, i.e. treating a blend as a simulation and running it imaginatively).

> Vital Relations: conceptual relations that show up again and again in compression[5] under blending. They are relationships between elements in the input spaces that are compressed inside the blend. The vital relations commonly seen are: Change, Identity, Time, Space, Cause-Effect, Part-Whole, Representation, Role, Analogy, Disanalogy, Property, Similarity, Category, Intentionality, and Uniqueness (Fauconnier and Turner 2002: 101).

Figure 3, below, is a schematic diagram of the underlying structure of a simple conceptual blend.
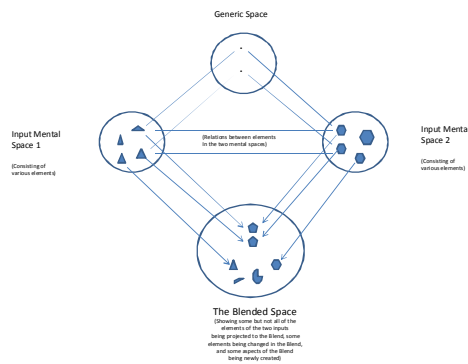
Figure 3.
Basic Blending Diagram
(After Fauconnier and Turner 2002: 46)

As an example of conceptual blending, Fauconnier and Turner (2002: 59) suggest that we imagine a contemporary philosopher saying, while leading a seminar:

> I claim that reason is a self-developing capacity. Kant disagrees with me on this point. He says itøs innate, but I answer that thatøs begging the question, to which he counters, in Critique of Pure Reason, that only innate ideas have power. But I say to that, What about neuronal group selection? And he gives no answer.

Fauconnier and Turner explain this conceptual blend as follows:

> The Debate with Kant blend has two input spaces. In one, we have the modern philosopher, making claims. In a separate but related input space, we have Kant, thinking and writing. In neither input space is there a debate. The blended space has both people. In addition, the frame of debate has been recruited to frame Kant and the modern

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[5] õCompression is discussed below at page 28.

philosopher as engaged in simultaneous debate, mutually aware, using
a single language to treat a recognized topic.

This blend is diagrammed in Figure 4. The diagram shows the two input mental spaces, above them the generic space that contains the elements found in both of the input mental spaces, and below them the blend, in which the imagined discourse is carried out. It also shows the frame of a õdebateö that is utilized in the blend.
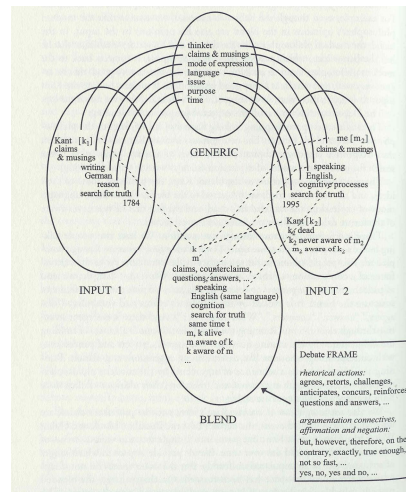
Figure 4.
Debate with Kant Blending Diagram
(From Fauconnier and Turner 2002: 62)

Conceptual blends are all around us, occurring all of the time. A computer desktop interface is an example of a very common blend. Here we have inputs from both the world of computers and from the traditional notion of a desk. The computer screen is not a desk in the traditional sense, but it can be understood as one, since we have the ability to move items that are õonö it, drop õfilesö into õfolders,ö and move items to the õrecycle bin.ö We donøt think of this as anything extraordinary; in fact, much blending occurs subconsciously and seems unremarkable to us.

As a third example, consider the ever-present news articles concerning the business and legal competition between Microsoft and Google. We might understand this competition as a õbattleö between the two companies, as in õMicrosoft and Google *fought* over market shares in the information search business.ö That statement would be a description of a conceptual blend, with inputs from war or boxing, on the one hand, and the business world on the other.

An example of a more anthropological sort is a ritual hunt, in which people enact a simulated hunt with the goal of enhancing their chances of success in a later, real hunt. Eve Sweetser has diagrammed such a ritual as shown in Figure 5 (Sweetser 2000).

The generic space

people
pursuit
spears
.....

time = Now
people running
pursuit
spears
speed A
pursued person
wearing buffalo hide
no intent to kill
goal: to be part of the blend

Hunting frame
Time = future
people hunting
pursuit
spears
speed B
real buffalo pursued
intent to kill
goal: get meat, hide, etc.

Input 1:
the real space
Inherits the
participants'
knowledge about
each other, the
physical setting of
the ceremony, etc.

Input 2:
the hunt space
Inherits
participants'
knowledge
about hunting,
buffalos, etc.

real runners as hunters
real pursuit as a hunt
spears as spears
speed A as speed B
pursued person as buffalo
intent to chase as intent to kill
successful pursuit as successful hunt

The blend: the ritual hunt

Figure 5.
Sweetser, Ritual Hunt Blending Diagram
(From Sweetser 2000: 320)

Fauconnier and Turner have identified a spectrum of types of blends, including what they refer to as *single-scope* and *double-scope* blends. A single-scope blend has input spaces with different organizing frames, only one of which is projected into the blend. The organizing frame of one of the inputs thus becomes the organizing frame of the blend. Double-scope blends also have input spaces with different frames, but the organizing frame for the blend includes parts of each of those frames and has emergent structure of its own (Fauconnier and Turner 2002: 131). Examples of double-scope blends include the computer desktop interface, mentioned above, and the notion of õsame-sex marriage.ö

Fauconnier and Turner argue that double-scope blends are unique to our species, and that the ability to perform double-scope blends is critical to art, religion, science and, more generally, acts of imagination. They argue that the ability to perform these blends arose approximately 50,000 years ago, at the outset of the Upper Paleolithic, as shown by the so-called õcreative explosionö that they (and others) claim occurred at that time (Fauconnier and Turner 2002: 36, 183; Turner 2006a). This issue is discussed below at page 47.

One feature of conceptual blending theory that features prominently in the analysis of art is *compression*. In Fauconnier and Turnerøs view, that word does not refer only to physical reduction in size or a shrinkage of time, but rather more broadly to a conceptual compaction that allows objects and ideas to be reduced to a size that is more easily understood. Turner (2006c: 18) writes:

> *Compression,* as a term in cognitive science, refers not
> specifically to shrinking something along a gradient of
> space or time, but instead to transforming diffuse and
> distended conceptual structures that are less congenial to
> human understanding so that they become more congenial
> to human understanding, better suited to our human-scale
> ways of thinking.

Turner (2006a) has analyzed a number of works of art from the perspective of conceptual compression. One example he provides is Marcel Duchamp's 1912 painting õNu descendant un escalierö (Nude descending a staircase), which he sees as a compression of viewpoint over time (see http://www.casbs.org/~turner/art/turner_images/index.html for that and other images analyzed in Turner 2006). More pertinent to the Upper Paleolithic, he asserts (Turner 2006a: 99) that a well-known image from the Hall of the Bulls in the cave of Lascaux simultaneously shows the bull's horns and head from two contradictory perspectives, demonstrating that people can compress those multiple viewpoints into a single blend, instantly (and perhaps unconsciously) understanding that the horns and head belong to the same bull. See Figure 6:

Figure 6.
Lascaux Bull, Showing Perspective of Horns
(From http://www.casbs.org/~turner/art/turner_images/index.html)

2. *Material Anchors for Conceptual Blends*

The core notion of conceptual blending is that ideas or input spaces existing in a person's mind are integrated together to form another concept in that person's mind. The input spaces and the blend itself could exist solely in a person's mind, and/or they could be represented in material form.

Edwin Hutchins (2005) has sketched out a theory of *material anchors* for conceptual blends. He argues that utilizing physical objects as representations of conceptual blends increases the stability of those blends in the mind, allowing much more complex reasoning than would otherwise be possible or, alternatively, that the same level of reasoning can be performed using fewer mental resources. He argues that incorporating the physical world into notions of conceptual blending draws human bodily interaction with the physical world into blending theory.

A simple example of a material anchor is a queue of people. Not all lines of people are queues, e.g. a line of soldiers in formation is not a queue. In order for an observer of a line of people to understand that line as a queue, the line of people needs to be blended with a notion of sequential order, such that there is a beginning and an end to the line, with significance being attributed to the position an individual person occupies in the line. This notion of sequential order is represented by a trajector in Hutchins' diagram of the blend, shown in Figure 7. Hutchins' diagrams utilize a box around any input square that is a material anchor. Other, more complex examples are compasses

(Hutchins 2005), clocks (Williams 2004), graves, cathedrals and even the human body (Fauconnier and Turner 2002). I will utilize Hutchinsø notion of material anchors in my analysis of Upper Paleolithic representations.
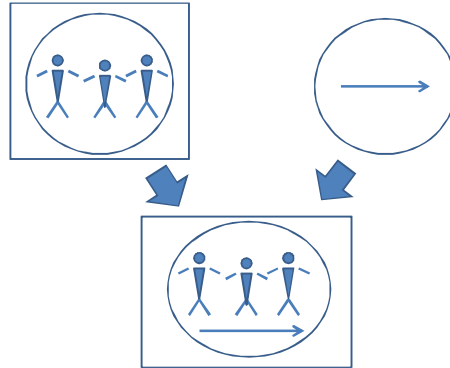
Figure 7.
Queue Blend Diagram
(After Hutchins 2005: 1560)

CHAPTER 3
The Relationship Between Metaphor and Blending

Conceptual metaphor theory was first developed in the early 1980s, beginning with the publication of Lakoff and Johnsonøs *Metaphors We Live By* (Lakoff and Johnson 1980). It predates the development of blending theory, and for that reason the standard, early works of conceptual metaphor theory make no reference to conceptual blending.

By contrast, blending theory was developed against the backdrop of metaphor theory, allowing both metaphor and blending theorists to comment on the relationship between the two. Proponents of blending theory have argued for some time that conceptual blending is the cognitive operation underlying metaphorical thought. That is, metaphors (and other phenomena, such as metonyms) are a type of conceptual blend (Fauconnier and Turner 2002; Kövecses 2002). This continues to the present day (Fauconnier and Turner 2008; Slingerland 2008). They argue that the view of metaphor as a projection from a source domain to a target domain does not capture the complexity of many metaphors, much less many non-metaphorical blends, and that it is more fruitful to analyze metaphor from the framework of conceptual blending (Coulson 2001: 165; Fauconnier and Turner 2008; Sweetser 2000). Fauconnier and Turner argue that õmetaphor itself is one particularly important and salient manifestation of conceptual integrationö and that õwe need to go far beyond the usual focus on cross-domain mapping and inference transferö (Fauconnier and Turner 2008). They state (Fauconnier and Turner 2008: 53):

> Conceptual products are never the result of a single mapping. What we have come to call õconceptual metaphors,ö like TIME IS MONEY or TIME IS SPACE, turn out to be mental constructions involving many spaces and many mappings in elaborate integration networks constructed by means of overarching general principles. These integration networks are far richer than the bundles of pairwise bindings considered in recent theories of metaphor.

From this point of view, metaphors are often single-scope or double-scope blends (Fauconnier and Turner 2002: 154; Sweetser 2000: 321-322). For example, when we say that õthe Democrats *attacked* Bush on his handling of the hurricane Katrina disaster,ö we have two input spaces (one involving a battle and the other involving political discourse) with different organizing frames, and one of those organizing frames (the frame of battle) is projected into the blend. The result is that we understand (perhaps subconsciously) the discussion about Bushøs actions after the hurricane as a battle, with attacking and defending parties, counterattacks, victory and defeat.

Blending proponents also argue that a simple notion of source to target domain mapping does not provide a basis for understanding human creativity (Slingerland 2008: 175); it cannot account for the "emergent properties" in the blend or the elaboration of the situation being depicted in the blend, nor can it deal with phenomena such as counterfactual statements (e.g. a man saying "if I were a woman, I wouldn't have done that")(Grady, et al. 1999). Blending theory thus becomes a "grand unifying theory," encompassing other phenomena but including conceptual metaphors (Slingerland 2008: 22). Fauconnier and Turner (2002: 55; 2008) assert that to the extent existing theories of metaphor do not include the notion of conceptual blending, they are false. Many metaphor theorists agree with those statements, but recently Lakoff (2008) has asserted that metaphors and blends differ in terms of their underlying cognitive operations, and that in some cases metaphors exist where no blending is occurring.

In this dissertation I shall make no attempt to resolve this issue. My goal here is to see whether either or both of those approaches are useful tools for generating ideas and understanding about the construction of meaning during the European Paleolithic. I will follow Grady (1999: 101) and others in considering the two theories to be complementary, while emphasizing that the differences between the two theories lead to differences in how they might be applied to the Paleolithic and how useful each of them may turn out to be.

Metaphor theory and blending theory operate on different units of analysis, and require different degrees of specificity of knowledge. Metaphor theory looks at the relationship between different domains of knowledge. A metaphor is created or utilized when a person views one domain of knowledge, the target domain, in terms of another domain, the source domain. A domain is a fairly broad piece of human understanding, such as "journey" or "heat."

By contrast, blending operates when mental spaces are fused to create a new mental space, the blend. As Kövecses (2002) points out, "a mental space is always much smaller than a conceptual domain, and it is also much more specific. Mental spaces are often structured by more than one conceptual domain."

Blending theory also utilizes a more complex model than does metaphor theory. Metaphor theory looks at the application of the knowledge of one domain to another, i.e. two domains in total. The two domains are in a relatively stable relationship to each other. Blending theory, on the other hand, utilizes a multi-space model, a *network* of spaces, to describe the operation of blends. It focuses on "the ability to combine elements from familiar conceptualizations into new and meaningful ones" (Grady, et al. 1999: 110), and argues that this is necessary in order to account for the complexities of human thought (Kövecses 2002: 228). Metaphors may be one part of a broader blending network. Blending theory also requires some knowledge of the frames that structure each of the input spaces.

Grady et al. (1999: 101) provide a good summary of the differences between metaphor theory and blending theory:

CMT posits relationships between pairs of mental representations, while blending theory (BT) allows for more than two; CMT has defined metaphor as a strictly directional phenomenon, while BT has not; and, whereas CMT analyses are typically concerned with entrenched conceptual relationships (and the ways in which they may be elaborated), BT research often focuses on novel conceptualizations which may be short-lived.

CHAPTER 4
The Construction of Meaning

1.   The Assumption that Art Has a Fixed Meaning

I began this dissertation with Randall White's statement that asking about "the meaning" of Paleolithic art is fundamentally naïve. But why is this so? What is a person asking about, when they ask about "the meaning" of Ice Age art? What information are they trying to elicit? It is worth considering the nature of "meaning" so that we can more precisely consider the issue of how it is, and was, constructed. At the same time, however, a thorough exploration of the notion of "meaning" would require a dissertation in itself; and in this dissertation I shall focus on a specific approach to "meaning" – Johnson's embodied cognition approach – that appears applicable to the archaeological record of the European Upper Paleolithic.

The question "what does Paleolithic art mean?" is naïve because it is overly simplistic on a number of levels, and rests on unwarranted assumptions. First, a question posed in those terms seems to assume that there is a *single meaning* for the broad corpus of representations dating to the Paleolithic. But Paleolithic art consists of a wide variety of types of representations – everything from cave paintings of animals to abstract signs to engravings inside caves to carved ivory figurines to pendants to carved spear throwers, and so on. And these various works of Paleolithic art were created over an immense span of prehistory and in a broad geographic area (Clottes 2008; Conkey 1993; White 2003).

Considering that these works of art were created by people hundreds of generations and thousands of kilometers removed from each other, it is clearly wrong to assume that any single meaning was ascribed to all of these images and objects. Even if we assume, for the sake of discussion, that a particular set of cave paintings was created by one person with a specific message/meaning in mind, and was viewed by people who knew him or her and understood the intended meaning, that shared understanding could only last for the briefest of times when considered from the viewpoint of the sweep of the Paleolithic, the seemingly endless expanse of "deep time." For inevitably those people passed on, and many generations later others, perhaps genetically and culturally unrelated to the maker, came to view the images, assessing them against a new set of cultural mores and assumptions. Could people who came to view the magnificent works of Chauvet, 15,000 years after their creation, be expected to ascribe the same meaning to those works as the people who created them?

Second, even within a single culture at a single point of prehistory there could be multiple meanings ascribed to a work of art. People bring their own backgrounds, experiences, social positions and understandings to the viewing of art. Even where people are raised and live within a fairly well defined, cohesive cultural environment, each has had a unique set of personal experiences that could lead him or her to understand imagery or figurines in unique ways.

So it would seem clear that the meaning of ice age art, like art generally, can only be understood in the context of its *meaning for someone,* as opposed to meaning in the sense of a fixed signification that a work of art might have for all people at all times (Conkey 1993). Eagleton (2007) explores the different aspects of meaning in a useful manner in the context of addressing the õmeaning of life.ö After listing a number of sentences in which variations of the word õmeaningö are used in different ways, he summarizes:

> These uses of the word could be said to fall into three categories. One is to do with intending something or having it in mind; in fact, the word õmeaningö is etymologically related to the word õmind.ö Another category concerns the idea of signifying, while the third runs the first two categories together by indicating the act of intending or having it in mind to signify something.

Eagleton (2007: 34-35) continues:

> It is important to distinguish between meaning as a given signification and meaning as an act which intends to signify something. Both meanings can be found in a sentence like õI meant (intended) to ask for *poisson*, but the word I actually came out with signifies poison.ö õWhat do you mean?ö means õWhat do you have it in mind to signify?,ö whereas õWhat does the word mean?ö asks what signifying value it has within a given linguistic system. These two different senses of õmeaningö are sometimes referred to by students of language as meaning as *act* and meaning as *structure.*

The sense of õmeaningö that was important to Eagleton, in his exploration of the meaning of life, was meaning as *act,* not meaning as *structure.* He was not interested in the dictionary meaning of the word õlife,ö but rather the act and intent behind the concept.

So too here. For the purposes of this dissertation and for the study of Paleolithic art more generally, there is little to be gained by considering meaning to be a fixed relation between an object and a concept ó a dictionary meaning or õgiven significationö in Eagletonøs terms. A cave painting has no fixed meaning in the sense that a letter or word might have a fixed meaning in a certain language at a certain time. Conkey (see, e.g., 2009) has advocated posing the question in terms that highlight these attributes of õmeaningö in the context of the study of Paleolithic representations. She suggests asking not õwhat is the meaning of that cave painting?ö but rather õhow was that cave painting *meaningful to* ice age people?ö While this may at first appear to be nothing more than a semantic sleight of hand, inasmuch as it merely uses a different form of the same word, approaching the question in this manner avoids the implication that a cave painting has a single, fixed meaning and focuses our attention on the people who viewed and

understood that painting, on their engagement with the art. The focus is on how it is meaningful to some person or group of people at a specific time.

On that point, we also need to ask: meaning *for whom, the maker or the viewer*? Davidson (1997) refers to meaning not as a property of the art, but rather of the õinteraction between the human agents and the material.ö When we speak of meaning, we immediately face the issue of whether we are referring to the meaning (if any) intended by the maker of the art, as opposed to the meaning ascribed to ó read into ó the work of art by the people viewing it. The maker of the art may have had one message in mind, but the viewer, coming from her own set of experiences and cultural assumptions, may receive an entirely different message. Or perhaps the maker had no set message in mind but, for example, created the work absent-mindedly, to pass the time, or solely for enjoyment; yet this does not prevent the viewer from creating meaning in his or her own mind.

To summarize, the idea of the meaning of a piece of art is not as simple as our naïve questioner might assume. Meaning is not a fixed attribute of the work itself, but rather exists *for some person or group of people*. The meaning ascribed to a work of art by one person may be quite different that that ascribed by another. The meaning intended by the maker may be lost on some or all of the viewers, especially viewers who confront it millennia after it was made, but at the same time those later viewers might read into the painting a multiplicity of interesting meanings.

2. Meaning from the Perspective of Modern Cognitive Science: Mark Johnson's Embodied Cognition Theory of Meaning

> *If we could only disabuse ourselves of the mistaken*
> *idea that thought must somehow be a type of activity*
> *ontologically different from our other bodily engagements*
> *(such as seeing, hearing, holding things, and walking), then*
> *our entire understanding of the so-called mind/body*
> *problem would be transformed.*

> Mark Johnson, *The Meaning of the Body, p. 140*

My inquiry here is whether modern theories of cognitive science are useful in understanding the construction of meaning during the European Ice Age. Therefore, it makes sense to ask how modern cognitive science approaches the question of meaning and whether applying that interpretation of meaning yields useful insights into the lifeways of those people of long ago.

Weøve seen that there are two theories of cognitive science, Conceptual Metaphor Theory and Conceptual Integration Theory, which are largely consistent with each other but approach human comprehension somewhat differently. At this point in their respective histories it is not yet settled how they interrelate. Nonetheless, they each contain explicit or implicit interpretations of õmeaningö that can be studied in their interrelation and with regard to what they might tell us about Ice Age art. I will begin with the explicit, and well-developed theory of meaning promulgated in association with

metaphor theory, and thereafter turn to the more implicit theory of meaning that accompanies Fauconnier and Turnerøs description of blending theory.

Metaphor theory can be traced to the 1980 work of Lakoff and Johnson, as was described above. Lakoff and Johnson thereafter expanded metaphor theory and investigated its philosophical implications in their 1999 book, *Philosophy in the Flesh* (Lakoff and Johnson 1999). Johnson has also published two books directly addressing the question of meaning from the standpoint of CMT and embodied cognition: his 1987 book *The Body in the Mind* (Johnson 1987) and more recently *The Meaning of the Body* (Johnson 2007). Together these works comprise a coherent, detailed body of philosophical investigation into the concept of meaning, and more particularly that aspect of meaning that arises from, and can be traced to, our bodily interactions with our physical and cultural environments.

It is precisely that interaction, Johnson claims, that gives rise to a large proportion of both our abstract concepts and the meaning that we ascribe to events and objects. In this view meaning is situated within the flow of bodily experience and actions that we engage in as we move through the world, with õthe worldö consisting not just of the physical environment surrounding us, but also our cultures and institutions. He rejects Cartesian dualism and its many unconsciously-adopted, deeply embedded corollaries, emphasizing that there is no clear distinction or ontological gap between body and mind, no clear demarcation between *perceptions* and *conceptions*, feeling and thinking. Cognition is embodied (Johnson 2007: 94):

> The idea that thinking is embodied is not the relatively obvious claim that in order to think, one needs a body and a brain. Instead, it entails that the nature of our embodiment shapes both what and how we think, and that every thought implicates a certain bodily awareness.

For Johnson, the meaning of actions or objects cannot be fixed for all people at all times. It exists only relative to the embodied cognition of the people who seek it or have it. Any sense that meanings are fixed, abstract entities õthat can float free of contexts and the ongoing flow of experienceö is an õillusionö (Johnson 2007: 80).

Johnson bases his approach on the work of the pragmatist philosophers James Dewey (1859-1952) and William James (1842-1910). He also draws on recent advances in cognitive science, in particular the work of Antonio Damasio (1994, 1999, 2003) on the importance of emotion in human reasoning and in the interaction of human organisms with their environment. Johnsonøs (2007: 208) goal is to restore to prominence the study of aesthetics:

> Aesthetics is the stone that was cast out by philosophers who thought they were constructing large metaphysical, epistemological, and logical monuments. On my view, however, the very stone that was cast out shall become the cornerstone of a theory of meaning.

This approach places art and music in a very central position in Johnson's (2007: 208) analysis of meaning, because "the arts are a primary means by which we grasp, criticize, and transform meanings."

How, then, does Johnson define "meaning," and what implications does that have for our study of the construction of meaning in deep time? Johnson (2007: 10) proposes what he calls "the embodied theory of meaning," which is worth quoting at some length:

> Human meaning concerns the character and significance of a person's interactions with their environments. The meaning of a specific aspect or dimension of some ongoing experience is that aspect's connections to other parts of past, present, or future (possible) experiences. Meaning is relational. It is about how one thing relates to or connects with other things. This pragmatist view of meaning says that the meaning of a thing is its consequences for experience – how it "cashes out" by way of experience, either actual or possible experience. Sometimes our meanings are conceptually and propositionally coded, but that is merely the more conscious, selective dimension of a vast, continuous process of immanent meanings that involve structures, patterns, qualities, feelings, and emotions. An embodied view is naturalistic, insofar as it situates meaning within a flow of experience that cannot exist without a biological organism engaging its environment. Meanings emerge "from the bottom up" through increasingly complex levels of organic activity; they are not the constructions of a disembodied mind.

This is, he notes, a broader conception of meaning than one usually encounters. Important are not just felt qualities or conscious processes, but also nonconscious bodily interactions with the world (Johnson 2007: 27). Emotions are a critical part of this process (Johnson 2007: 67).

Central to this definition is the notion that an event, action or object is meaningful because of its relation to past, present, or possible future experiences. Placing one's hand too close to a fire could be meaningful because it calls up memories of an earlier time that one made that same mistake, and/or because it warns one not to make the same mistake in the future. "In pragmatist lingo, the meaning of something is a matter of how it connects to what has gone before and what it entails for present or future experiences and actions" (Johnson 2007: 265).

The key point here is that meanings do not exist objectively, outside of human experience, but instead they exist *for some people or a community*, based on and related to those people's experience and understanding, and in that context meaning is partially based on the projections from the bodily experiences that those people have (Johnson 1987; Williams 2004). Lakoff and Johnson (1999: 6) assert that "because our conceptual systems grow out of our bodies, meaning is grounded in and through our bodies." Williams (2004: 3) has summarized the idea as follows:

> What we are talking about, then, is meaning as conceptualization, as the embodied experience of a conceptualizer building, connecting, and integrating mental spaces structured by conceptual models and anchored by perceptual experience and potential action.

Although Johnson's work is a reaction to dualist and "objectivist" notions of meaning, and he therefore emphasizes this physical interaction with the world, he does not claim that meaning is generated only through the physicality of a situation. Johnson does not assert that projections from bodily experiences are the only factor determining the meaning that an event, image or symbol might have for a certain people. On the contrary, those image schemata, blends, frames and projections are understood by individuals embedded in linguistic communities, cultures, and historical contexts. Metaphorical projections therefore do not "trump" culture and historical context, but partially underlie or produce them.

Nor does he claim that the human *brain* – as distinguished from the human *mind* – plays no role in the construction of meaning. On the contrary, the brain is a key component of the process: "without a brain, there is no meaning" (Johnson 2007: 175).

It is critical to understand what Johnson means by the human "body":

> The principal problem with our commonsense or folk-theoretical concept of the body is that it is limited almost exclusively to the biological body. We see the body as that physical "thing," and we see everything else (environment, social relations, and culture) as standing outside of our bodies. This is the mistake that leads many to assume that "body" and "mind" must obviously be two different kinds of things (Johnson 2007: 277).

In his conception, culture itself is intertwined with the human body:

> It is popular today in various circles to speak of culture as autonomous and independent of individual bodies. Culture has a *relative* stability and independence. But there is no culture without embodied creatures who enact it through customs, practices, actions, and rituals. Even though aspects of culture obviously transcend and outlive particular individuals, those artifacts and practices have *no* meaning without people who use the artifacts while engaging in complex social practices (Johnson 2007: 277).

Thus far we have seen the importance that Johnson places on the embodied mind and embodied cognition. That is key to his notion of how meaning arises. We also learn from him that meaning exists in relation to the past and future, it is "relational." But

knowing how it arises still leaves one wondering what *it is*, in the same way that knowing how a car is built leaves one wondering how it looks and drives after it is on the road.

In answer to this question, Johnson (1987: 176, 190) argues that the key element of meaning is *understanding*, that a theory of meaning is a theory of *how we understand* things. He writes:

> Meaning is always a matter of human understanding, which
> constitutes our experience of a common world that we can
> make some sense of. A theory of meaning is a theory of
> understanding. (Johnson 1987: 174).

What makes up that common world?

> Thus our experience and understanding partake of the
> reality of both our bodily organism and our environment,
> broadly conceived to include our history, culture, language,
> institutions, theories and so forthö (Johnson 1987: 207).

Our understanding, based on all of the foregoing elements, is thus what meaning consists of, for us. Meaning is understanding.

But if meaning is relational ó existing in relation to the past and to an action or objectøs implications for the future ó then there is also one other element involved: *significance*. Our bodily engagement with the world includes how things become significant to us, given the nature of our bodies, our brains, and our environments. It is not enough to see how we understand something, in order to determine what meaning it has for us. We also need to judge what sort of importance or significance it has for us. William James (James 1911/1979) touched on this when he described his õpragmatic rule of meaningö:

> The pragmatic rule is that the meaning of a concept may
> always be found, if not in some sensible particular which it
> directly designates, then in some particular difference in the
> course of human experience which its being true will make.
> Test every concept by the question, õWhat sensible
> difference to anybody will its truth make?ö and you are in
> the best possible position for understanding what it means
> and for discussing its *importance* (emphasis added).
> .

The significance of significance, if you will, is concisely stated by Dissanayake (2000: 72):

> While philosophers and makers of dictionaries define
> õmeaningö and õmeaningfulö disinterestedly, most people
> use these words informally to express personal feelings
> about the seriousness or importance something holds for
> them. õThe movie had layers of meaningö suggests there

was more than an obvious interpretation to the story: it provided something of significance to think about. "Our conversation was really meaningful" indicates that for the speaker it had "value" – a deeply felt conviction of significance, even truth.

Both of these aspects of meaning, understanding and significance, find their root in a person's bodily interaction with the world. Image schemas and primary metaphors are a prime example of that process. Consider the image schema of "balance," which becomes the foundation of metaphorical expressions such as "Obama took a balanced approach to the environment." We all have an innate sense of what "balance" consists of, due to our daily movement throughout our environments. We feel the need for balance when we walk up stairs or play soccer or carry dishes into the kitchen. That bodily sense of "balance" is then appropriated and used in a metaphorical expression, through which we understand something abstract (in this case Obama's philosophical approach to an issue) by means of that physical experience. That process of understanding one thing in terms of another, more readily understood as feeling, is what allows us to understand Obama's approach; we understand his disposition toward a problem in comparison to our recurring bodily experience.

What's more, this metaphorical projection allows us to grasp the significance of his approach to us. We understand the notion of balance to be positive, because it is a generally positive phenomenon in our daily lives (it is normally better to be in balance when you are walking up or down stairs, for example). We therefore typically see a balanced approach to a political question also to be positive; that is a predictable reaction that is tied into our emotional assessment of the politician. This process also provides us with a sense of the significance of the situation, in that it ties this positive assessment of this particular politician into the web of our past experience (our experiences with how balanced approaches tend to lead to certain results), which in turn ties this statement into our assessment of what might happen in the future. In this way, the image schema of "balance" becomes the basis of our understanding of a situation and our assessment of its significance. The image schema of "balance" is the basis of how this politician's position on an issue is meaningful for us.

Applying Johnson's theory of embodied cognition and how meaning arises to Ice Age art, when we pose Conkey's question of how a particular Paleolithic image might have been *meaningful* to the people of the Ice Age, what we are actually asking is how they *understood* that image, drawing upon their bodily interactions with the environment around them, and why, after understanding it, they saw *significance* in it. The ability to understand an image or a figurine was a necessary but not a sufficient condition for it to be meaningful; when they ascribed meaning to it they were also denoting that it had significance for them.

Our question implicates not just their culture and social institutions, although those are important, but also the physical environment in which they lived, and how they moved through that material world. In assessing meaning we need to consider important physical aspects of their lives: the limestone cave walls, taiga grasses, well-worn summer paths and winter snowfall, the wide expanses and the herds of animals. We need to think about the smell of spring and what that meant after a cold, perhaps hungry

winter. Itøs not enough to consider only their cultures or institutions: the physicality of their worlds must also be part of our assessment.

Adopting this theory of meaning has profound implications for how we might analyze the meaning of images such as the õSorcererö of Les Trois Frères. It vastly broadens the scope of our inquiry, and makes much more evidence relevant to an assessment of how that image was meaningful to the people who made it and viewed it.

Under the õdualist,ö õobjectivistö theory that Johnson criticizes and that has seeped into so many of the views and concepts that we take for granted in our Western culture (the theory in which meaning arises from pre-existing mental concepts through fixed relations between the image and those concepts) what is important about the õSorcererö is what is depicted in the image itself, what we see when we are standing in the õSanctuaryö chamber where it was engraved and painted, and our mental assessment of those elements. Those are valid questions. But at that point the inquiry trails off and reaches, to a large extent, a dead end. Although archaeologists are constantly finding new types of evidence and finding better ways of working with the evidence that we have long had, there are limits to the conclusions that can safely be drawn from the objects found at Paleolithic sites. It is no wonder that archaeologists often express cynicism about our ability even to understand prehistoric art.

Johnsonøs theory of meaning is no panacea for these ills, but it does open up new areas of inquiry and brings new evidence to bear. An image and the mental ideas of the maker and viewers are no longer all that we can consider. Under Johnsonøs theory, we now also need to look at the makersø and viewersø bodily engagement with the work, which involves their bodily engagement not just with the immediate physical environment in the chamber itself but in the broader, surrounding environment. For images in caves we need to consider the corporeal process by which one gets to the location of the image, and the contrast between oneøs physical engagement with that environment and the engagement with the very different, above ground world that constitutes their typical physical existence. Not just concepts but percepts, not just ideas but emotions, now are õfair gameö for analysis. How might Ice Age peoples have felt, emotionally, about the image? How did the type of shapes and lines affect their emotional and physical reaction to the image? What was it like getting to the image, as opposed to what they were used to doing above ground? While we cannot truly know the Magdalenian culture, we can nonetheless improve the amount and quality of information that bears on how the images were meaningful to them. The palette from which we as archaeologists can legitimately paint suddenly includes a broader variety of colors.

What is important here is that it is not simply that we now have another õline of evidenceö to use in our analysis. The nature of this evidence is arguably better than the nature of the evidence we would consider if we were simply investigating the mental connection a person has with an image, what a person sees when she looks at the image. The evidence that Johnsonøs theory causes us to consider is, in a sense, more reliable from a scientific point of view, because it consists of matters involving the human body and its relationship to the physical environment. Human cultures have changed dramatically since the Ice Age, but the human body has remained the same. If we can base an argument on physical relationships we have a better chance of being closer to the truth than if we make informed speculation about cultural values.

I provide a more detailed example of the application of Johnsonøs theory of meaning when I consider the meaning of the õSorcererö in more detail, below. Before doing that, however, I turn to a review of how õmeaningö is viewed from the perspective of blending theory, which will provide us with additional tools in our attempt to excavate meanings from the Ice Age.

3.   *Meaning from the Perspective of Modern Cognitive Science: Blending Theory*

Fauconnier and Turner, unlike Johnson, provide us with no explicit theory of õmeaning.ö There is no extended discussion on that topic in *The Way We Think*. Nonetheless, it could be argued that their entire theory of conceptual blending is about meaning, and how new meanings are created through the process of conceptual integration. They write (Fauconnier and Turner 2002: 92) that:

> We do not establish mental spaces, connections between
> them, and blended spaces for no reason. We do this
> because it gives us global insight, human-scale
> understanding, and new meaning.

The phrase õglobal insight, human-scale understanding, and new meaningö is very similar to the definition of meaning provided by Johnson, namely, understanding plus significance.

In Chapter 16 of *The Way We Think,* Fauconnier and Turner describe the õconstitutive and governing principlesö that guide how human minds conduct conceptual integration. They focus to a large extent on õcompression,ö which, as weøve seen above, is the process of õtransforming diffuse and distended conceptual structures that are less congenial to human understanding so that they become more congenial to human understanding.ö Compression can take place as two input spaces are blended into a single blended space (an õouter-space relationö can be compressed into a more manageable õinner space relationö), such as when a great disparity in time is compressed into a more easily understood temporal relationship in the blend. See Figure 8.

Outer space relation (between two mental spaces) becomes compressed
into an inner space relation (in the Blended Space)
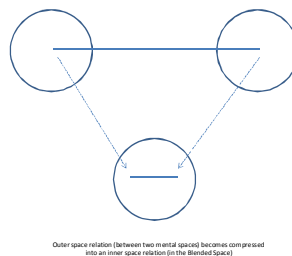
Figure 8.
Compression Diagram
(After Fauconnier and Turner 2002: 94)

This is the case in Fauconnier and Turner's example of the mile run, the comparison of mile record times depicted as an imagined race between athletes who held the world record at various times in history. Compression can take place not just with regard to time, but also in connection with other of the õvital relations,ö such as cause and effect relationships. Also, time can be õcompressedö into space, as occurs with an analog-style wristwatch or clock.

The point of compression and of the other aspects of conceptual blending is to lead to understanding and to an assessment of significance. Fauconnier and Turner (2002: 312) state that the õoverarching goalö of blending is to õachieve human scaleö:

> The constitutive and governing principles have the effect of creating blended spaces at human scale. The most obvious human-scale situations have direct perception and action in familiar frames that are easily apprehended by human beings: An object falls, someone lifts an object, two people converse, one person goes somewhere. They typically have very few participants, direct intentionality, and immediate bodily effect and are immediately apprehended as coherent.

This single major goal is supported by five subgoals: compress what is diffuse; obtain global insight; strengthen vital relations; come up with a story; and Go from Many to One (Fauconnier and Turner 2002: 312).

To summarize the discussion thus far, in Part I of this dissertation we considered both Conceptual Metaphor Theory and Conceptual Integration (Blending) Theory. Metaphor theory rejects the traditional view that metaphors are unusual twists of language, in favor of the view that metaphorical thinking is integral to how humans understand and engage with the world. Target domains, typically more abstract realms of thought, are understood by means of source domains, notions that are more readily understood. Metaphorical thinking is common in all societies today, though the precise metaphors used in different cultures vary. Underlying complex metaphors are primary metaphors and image schemas, which in turn are based on human physical interaction with the world as understood by means of embodied cognition.

Blending theory takes a somewhat different approach, conceiving of much of human thinking as being the integration of concepts, with input mental spaces and blends being structured by frames, things about which we already know. Conceptual blends can be built upon other conceptual blends, and they can be represented by means of material objects. Blending theorists contend that metaphors are one type of blend.

Both metaphor theory and blending theory directly implicate how human beings construct meaning. Mark Johnson has elaborated a theory of meaning based on embodied cognition and human physical engagement with the world. In his view, meaning is largely an issue of understanding and significance, and a significant portion of the meaning that people attribute to occurrences and interactions can be traced to underlying elements of cognition such as image schemas and primary metaphors.

       In Part II of this dissertation I will consider the origins of the ability to blend and to think metaphorically, and in connection with that discussion I will consider the theory of õcognitive fluidityö of Steven Mithen and how it relates to blending theory. This inquiry into the claimed origins of such manners of thinking is important because the goal of this dissertation is to apply metaphor and blending theory to a time period far enough back in human history that we should not simply assume the people of that time period thought the way we do today.

PART II

THE DEVELOPMENT OF CONCEPTUAL BLENDING
AND CONCEPTUAL METAPHOR

CHAPTER 5
The Origins of Conceptual Blending and Metaphor

Fauconnier and Turner present conceptual blending as a theory of how the mind works *today*. Their theory seeks to describe a major element of the thought process of anatomically modern humans. However, they see conceptual blending not only in its current, õadvancedö form, but also place it into a longer historical context, and offer opinions on when and how it came into being.

Fauconnier and Turner assert that conceptual blending has existed and been developing for millions of years:

> The basic mental operation of *conceptual integration*, also known as *blending*, has been present and evolving in various species for a long time, probably since early mammals, and there is no reason to doubt that many mammalian species aside from human beings have the ability to execute rudimentary forms of conceptual integration (Turner 2006a: 93-94).

> From mammals to primates to hominids, there was a biological development of increasing capacity for conceptual integration (Fauconnier and Turner 2002: 395).

However, it is only humans that reached and crossed the critical watershed, developing the most advanced form of conceptual integration, double-scope conceptual blending:

> Human beings evolved not an entirely different kind of mind, but instead the capacity for the strongest form of conceptual integration, known as *double-scope blending* (Turner 2006a: 93-94).

That unique development in turn allowed for the õcreative explosionö in human culture, the development of art, music, religion, advanced tool use, decorative dress, language, mathematics and science (Fauconnier and Turner 2002: vi, 182 and 395-396; Turner 2006b: xv).

> Human beings are thus on a gradient with other species, but what a difference an extra step makes! (Turner 2006a: 93-94)

Fauconnier and Turner assert that humans developed the ability to perform double-scope conceptual blending (DSCB) approximately 50,000 years ago, although

their estimate of the timing of that development has become slightly more flexible in recent years. In *The Way We Think*, published in 2002, they wrote:

> *Fifty thousand years ago, more or less*, during the Upper Paleolithic Age, our ancestors began the most spectacular advance in human history (Fauconnier and Turner 2002: v, emphasis added).

They assert that it arose õaround the time of the Upper Paleolithicö (Fauconnier and Turner 2002: 215). In 2003 Turner expanded the time frame somewhat, writing that blending played a crucial role in the development of our species õover the last fifty or one hundred thousand yearsö (Turner 2003; see also Turner 2006a). Turner (2006a: 95) has also described the timing as being õover the last fifty thousand years, give or take (the dating is still being worked out in the archaeological record). . . .ö

   While we should not parse Turnerøs precise choice of words or dates in his various publications too closely, the question of timing is an important one. To be a viable theory of the development of modern cognition, conceptual blending theory must be consistent with the ever-expanding archaeological record, and it should not run counter to the genetic evidence for modern human evolution and dispersal. At this point, it is sufficient to note that Turnerøs possibly increased flexibility in timing is a recognition of the ongoing debate over modern human behavior in archaeology, and it underscores the importance of his proposal that conceptual blending theory be the subject of broad-based research by specialists in many fields:

> We are at the beginning of a period of research into the principles of double-scope blending, the neurobiological mechanisms that make it possible, the pattern of its unfolding in the human infant, and the path of its descent in our species. This is a challenging research program, one that will require the combined efforts of cognitive neuroscientists, developmental psychologists, evolutionary biologists, and scholars of story (Turner 2003).

Clearly archaeology can also be major contributor to that research program.

   But if DSCB is the critical development in the cognitive history of our species, what was the process by which it came into being? How did human beings separate themselves mentally from the other primates?

   Fauconnier and Turner ascribe the development of DSCB to *biological* development. They assert that DSCB was achieved õpresumably through neurological evolution, although that final evolutionary step need not have been a great biological leapö (Fauconnier and Turner 2002: 389).   It does not appear that they see modern human culture as contributing to the development of DSCB; on the contrary, they see the development of DSCB as giving rise to culture as we know it (Fauconnier and Turner 2002: 389). They write that human beings, once they were equipped with the ability to perform DSCB, could õgo through the arduous cultural work of producing integration networks, using those networks as inputs to further networksö (Fauconnier and Turner

2002: 215). Biological evolution led to DSCB, which in turn allowed the development of culture, art, science, religion, and other uniquely human singularities.

They do not offer a detailed explanation of how that biological development occurred. That too will need to be part of suggested broader research program. Turner (2003) does however offer this interesting comment:

> It is far from clear how this advanced human ability for blending evolved. It is tantalizing that it was preceded phylogenetically by both dreaming and memory, each of which requires that the brain differentiate between the immediate environment and a different story.

CHAPTER 6
Mithen and "Cognitive Fluidity"

Fauconnier and Turner do not claim to be archaeologists, and draw on archaeology minimally, offering only a few thoughts on how this unique ability might have arisen in our species. There is, however, one archaeologist who has been working on a theory of cognitive archaeology that is remarkably similar to their conceptual integration theory. Steven Mithen, currently at Reading University in England, has long been interested in the cognitive aspects of human (and pre-human) creativity, and he has published two books that deal squarely with the origins of modern human cognition. The first of these, *The Prehistory of the Mind* (Mithen 1996), presents Mithen's theory of the development of "cognitive fluidity," the ability that he contends is the hallmark of the thinking of our species. More recently he published *The Singing Neanderthals* (Mithen 2006), in which he traces the origin of human language and musical ability, and in which he provides some further, updated views on the development of cognitive fluidity. Mithen's (1996: 13) overall approach is to link archaeology and psychology.

For Mithen, cognitive fluidity is the ability to link the various types of knowledge that people have, and thereby to create advanced thinking and abilities, tools, art, religion, and other aspects of modern life. This ability is unique to modern humans. Earlier hominids had a general intelligence, and also intelligence about natural history, social matters, and technical matters, but those types of intelligence were held separately in their minds: they were unable to mix the knowledge from those different realms. Over the course of human evolution some limited mixing became possible, but only our species *Homo sapiens sapiens* acquired the ability to blend notions from all of the different realms.

Mithen analogizes the mind to a cathedral with multiple naves. The central space of the cathedral is connected to each of the naves, but the naves are not connected to each other. If one were to create a doorway from each nave to the adjacent nave, then it would be possible to pass freely and directly from one to the next. For Mithen, the central space of the cathedral represents general human intelligence, and each of the naves is one of the more specialized types of intelligence, i.e. technical, social or natural history. The development of cognitive fluidity was analogous to opening doors between these naves, such that mixing of different types of knowledge could take place. It was this ability to mix notions from different spheres of knowledge that allowed humans to create what we identify as art, religion, science, and specialized tools.

For example, the creation of art requires that one draw upon aspects of each of the different types of specialized intelligence. In order to create artifacts/images with symbolic meanings as a means of communication, one might draw upon social intelligence for the notion of intentional communication, one might draw upon natural history intelligence for the skill of interpreting "natural symbols" such as hoof prints, and one might draw upon technical intelligence for the ability to produce artifacts from mental templates (Mithen 1996: 163). Without the ability to draw simultaneously from each of those realms of intelligence, a person could not create art such as the

õLöwenmensch,ö the figure of a human body with a lionessøhead from Hohlenstein-Stadel cave in Southern Germany (Figure 9, dated to approximately 32,000 B.P.):

> the ability to conceive of such a being requires a fluidity
> between social and natural history intelligences (Mithen
> 1996: 164; see also Mithen 2006: 264).
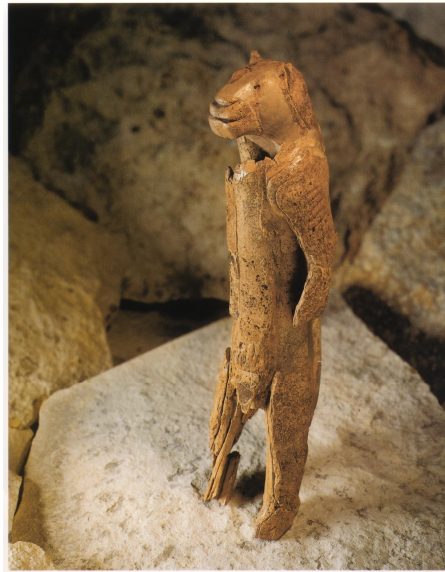
Figure 9.
The õLöwenmenschö
(From Bosinski, et al. 1994: 28)

Mithen does not simply explain the workings of the modern brain, as it exists today. He also describes multiple stages through which the brain has evolved, and he ties each stage to the material culture left behind by the hominins alive at that time. Mithen (1996: 211) sees the process of evolution as oscillating between increased cognitive flexibility and increased modularization. In the earliest stage, Phase I, the hominid brain had simply a general intelligence; the specialized types of intelligence described above did not yet exist. Thereafter, in Phase II, those specialized types of intelligence were developed, but they were not yet connected to each other. Phase III is the modern human mind, with multiple specialized types of intelligence, all of which can be accessed simultaneously, creating a fully fluid cognition.

Mithen proposes that the development of language preceded the development of cognitive fluidity, and that language was in fact the means by which the various intelligences were connected in order to achieve cognitive fluidity. He notes, citing recent discoveries in paleoanthropology, that our species had evolved by 170,000 B.P. (Mithen 2006: 246-249). At that time the various types of intelligence were not connected to each other, but Homo sapiens had the ability to create language, and we were in fact in the early stages of doing so (Mithen 2006: 257). By 150,000 years ago, he asserts, the separate intelligence modules were beginning to break down, and by 100,000 years ago partial cognitive fluidity was achieved, as is shown by the archaeological

record from the Levant from that time period (Mithen 1996: 178-182). As evidence for this, Mithen cites the placing of animal carcasses within human graves, which he interprets as possibly indicating ritualized burial activity and belief in religious ideologies, and hunting with a greater degree of planning.

For Mithen (1996: 185-187), it was the development of language that caused the development of cognitive fluidity. Mithen argues that human language, in its earliest stages, was almost entirely social in nature, in that it dealt with social matters, not technical issues or matters relating to the natural environment. However, embedded within that early human social language were "snippets of non-social information," and the act of speaking caused those to "invade" the realm of social intelligence (Mithen 1996: 189). Now the thought processes involving social intelligence could also involve increasing amounts of non-social information, and social thinking began for the first time to have non-social thinking mixed in with it. Those people who had the greatest ability to integrate these non-social pieces of information into their social affairs – those people with the greatest cognitive fluidity – gained a reproductive advantage over others, and tended to pass their genes to the next generations. Mithen suggests (1996: 193) that nursing human females were one group that "would have been under particular selective pressure to achieve cognitive fluidity," due to their presumed need to rely on others to provide food:

> In this context "snippets" of language about food and
> hunting may have been especially valuable in the social
> language between males and females. Females, in
> particular, may have needed to exploit this information
> when developing their social relationships with males.

This was not an overnight development and it did not proceed in a linear fashion; rather, it was a sporadic accretion that started and stopped at various times. For example, the recent discoveries in Africa, in Mithen's (2006: 250) view, show that symbolic behavior was present at 70,000 B.P., but they do not show *full* cognitive fluidity.

On the question of when the development of full cognitive fluidity took place, it appears that Mithen's views have changed somewhat over time. In *The Prehistory of the Mind* he stated that this final redesigning of the human mind arose "after 60,000 years ago" (Mithen 1996: 178), and that "the final step to a full cognitive fluidity occurred at slightly different times in different populations between 60,000 and 30,000 years ago" (Mithen 1996: 194). He describes a process of "parallel evolution" taking place after dispersal. That is, at 50,000 years ago, when anatomically modern humans dispersed from Africa, full cognitive fluidity had not yet been achieved, but thereafter the people in each of the dispersed groups developed it on their own (Mithen 1996: 184). By contrast, ten years later he argues that human societies reached a "demographic threshold" at approximately 50,000 B.P. that allowed the changes to cognitive fluidity to be solidified throughout the human population (Mithen 2006: 262), and that:

> The modern humans that dispersed throughout the Old
> World soon after 50,000 years ago, and who entered the

New World at some time after 20,000 years ago, had
language, music and cognitive fluidity (Mithen 2006: 266).

It would appear that in his latest book he has abandoned the notion of parallel evolution, positing instead that full cognitive fluidity existed in the population that dispersed from Africa at approximately 50,000 years ago.

The concept of parallel development had serious theoretical difficulties. For that process to work, all of the widely dispersed groups of humans who left Africa at approximately 50,000 B.P. would have had to be subjected to the same evolutionary pressures, and the biological response to those pressures would have had to be the same. In addition, that parallel evolution would have to have occurred in a relatively short period of time, approximately 20,000 years, given the development of õartö in Europe by approximately 32,000 years ago. Since the notion of parallel development was not necessary to his overall theory, dropping that concept simplified his overall theory and made it more defensible.

While focusing his investigation on the development of cognitive fluidity in *Homo sapiens sapiens,* Mithen does not ignore the Neanderthals. He is unequivocal that the Neanderthals did not have cognitive fluidity. In his view, the Neanderthals did not have art, and lacked the capacity to create it (Mithen 1996: 157). A strong piece of evidence is the cave of Bruniquel in Southern France. Citing Jean Clottes, Mithen (2006: 242-243) asserts that Neanderthals had discovered this cave but modern humans had not, and that the lack of wall painting is evidence that õthe Neanderthals did not ó indeed, could not ó engage in this activity.ö[6] Nor does he feel that the Châtelperronian artifacts demonstrate cognitive fluidity. Although some researchers have cited those artifacts as evidence of Neanderthal artistic ability, Mithen (2006: 232) argues that õthe final Neanderthals in Europe were imitating the symbol-using modern humans without understanding the power of symbols.ö Mithen (1996: 135-136; 2006: 241) sees no evidence of graveside ritual by Neanderthals, and states that the significance of Neanderthal burials is õunclear.ö He argues further that Neanderthals had no modern language, but rather an advanced form of the õholistic, manipulative, multi-modal, musical, and mimeticö communication system he refers to as õHmmmmmö (Mithen 2006: 221). Overall, Neanderthals had:

A rolling, fleeting, ephemeral consciousness about their
own knowledge and thoughts concerning toolmaking and
foraging. There was no introspection (Mithen 1996: 148).

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[6] It should be noted that not all caves visited by anatomically modern humans have wall paintings.

CHAPTER 7
The Relationship Between Conceptual Blending and Cognitive Fluidity

1.   Similarities and Differences

There is an obvious similarity between the theories of conceptual integration and cognitive fluidity. Both involve a mixing or blending process that allows for the creation of art, religion, and other aspects of modern symbolic behavior. Mithen sees the blending of knowledge from different *domains of intelligence*: social, technical and natural history. Fauconnier and Turner see the blending of *concepts*, mental spaces being meshed together to create a novel blend. Mithen (2006: 233) even writes that cognitive fluidity is õin essence, the capacity for metaphor, which underlies art, science and religion,ö and of course Fauconnier and Turner see conceptual integration as the process involved in metaphorical thinking.

Conceptual blending is at once broader and more specific than cognitive fluidity. It is broader in scope because it describes a process that occurs more generally in human thinking. Conceptual blending is not limited to taking knowledge from one domain of intelligence and mixing it with that of another, it can occur with two sets of knowledge from the <u>same</u> domain of intelligence. For example, two mental spaces involving natural history, or two mental spaces involving social knowledge, can be blended to form a third space, with or without input from other types of intelligence. This would meet the definition of conceptual blending but not cognitive fluidity. Fauconnier and Turner describe blending as being all-pervasive in human thought.

At the same time, Fauconnier and Turnerøs theory is described in much greater particularity and detail than is the process of cognitive fluidity. They have spent more time studying the process itself, and they have recognized and elaborated on detailed concepts such as frames and vital relations.   Mithen has not attempted to describe the workings of cognitive fluidity in any such detail. Rather, he has focused on the evidence for cognitive fluidity in the archaeological record.

Perhaps the better comparison is to look at cognitive fluidity in its relation to double- scope conceptual blending (DSCB), instead of conceptual blending generally. Fauconnier and Turner assert that double scope blending is the hallmark of modern human thinking, and they have provided a detailed analysis of what double scope blending entails. Such a comparison demonstrates how much more specific their theory is than Mithenøs theory. The very definition of double scope conceptual blending, as the type of blending in which two input spaces *with conflicting frames* are blended into a new mental space drawing upon both frames, involves the introduction of concepts for which there is no counterpart in Mithenøs theory.

The simplicity of Mithenøs theory allows it to be applied more readily to the archaeological record. If one begins with an artifact and then asks whether the creation of that artifact necessarily involved cognitive fluidity or double scope conceptual blending, it would be easier to make a case for the former, because its requirements are

much more basic. For example, Mithen (1996: 166) argues that the Löwenmensch statuette from Southwest Germany is an example of cognitive fluidity, because it evinces both knowledge about people (social intelligence) and knowledge about animals (natural history intelligence). This remarkable carving has a human body – itøs not clear which sex was intended, if in fact any was intended – and the head of a cave lion. By contrast, to say that the Löwenmensch is evidence of double scope conceptual blending requires that we identify the frames that structure each input space, and describe how elements of both frames have been imported into the blended space from which the physical statuette was created. This is a more detailed process.

There is no indication in his books that Steve Mithen is aware of the theory of conceptual blending. His more recent book, *The Singing Neanderthals* (Mithen 2006), was published four years after Fauconnier and Turnerøs *The Way We Think (Fauconnier and Turner 2002),* yet in it there is no mention of conceptual integration, nor is there a citation to any of the works of Fauconnier, Turner, or any of the articles on conceptual blending theory.   Mithen does not cite Lakoff or Johnson, nor is there any reference to conceptual metaphor theory.

Curiously, in his 1998 book section (Mithen 1998), Mithen draws on the work of psychologist Margaret Boden, who, like Fauconnier and Turner, theorizes about the blending of conceptual spaces (Boden 1998). Mithen (1998: 169) compares his approach to that of Boden:

> Rather than using the terminology of õconceptual spaces,ö I
> referred to these as õcognitive domainsö – but the idea has
> significant similarities to those of Boden.

Throughout that book section Mithen adopts the language of conceptual spaces, essentially equating them to domains of intelligence. During the early 1990s Fauconnier (1994, 1997) had already been publishing work on õmental spaces,ö but there is no indication that Boden or Mithen was familiar with that work.

For their part Fauconnier and Turner, while they do not claim to have studied the archaeological record in any detail, are well aware of Mithenøs work and compare it to their own. They refer to Mithenøs work in a number of contexts in *The Way We Think*. They see Mithen as also having identified a õgeneral mental operationö (Fauconnier and Turner 2002: 37) that underlies creative thinking, and seem almost to equate their theory to his when they write that õfor Mithen, blending, which he calls ÷cognitive fluidity,ø is what made possible the invention of racismö (Fauconnier and Turner 2002: 27). They see Mithenøs and also Bodenøs work as evidence that õcreativity theoristsö of many different specialties are converging on a version of blending as the operation that gives rise to creative thought.

Fauconnier and Turnerøs primary criticism of Mithen involves his thinking on the role of language in the creation of blending. As noted above, Mithen argues that language existed *before* cognitive fluidity, and was the mechanism that allowed cognitive fluidity to develop. Fauconnier and Turner disagree. For them, there was a long process of the development of DSCB, and language was a õsingularityö that arose quickly once

DSCB had been achieved. They contrast their view with that of Mithen as follows (Fauconnier and Turner 2002: 182):

> Mithen explicitly places the origin of language far before
> the development of õcognitive fluidity.ö For him, language
> is an input to õcognitive fluidity.ö For us, by contrast, it is
> the most impressive behavioral product of double-scope
> blending.

2.   *Difficulties with Theories that Rely on Genetic Mutations*

To the extent that any theorist subscribes to the notion that modern human cognition was the result of a sudden mutation in the human brain (e.g., Klein 2000), his or her theory will face possibly insurmountable difficulties, especially if one holds to the scientific method testability. At the present time, no such assertion can rise above the level of sheer speculation, notwithstanding some tantalizing discoveries such as the FOX P2 gene, because there is no way to prove or disprove it. Moreover, any theory that relies on a single critical mutation as the direct cause of modern thinking either (a) fails to explain the archaeological record from time periods prior to that mutation, or (b) fails to explain the delay from the time of that mutation to the assumed cognitive õbig bang.ö

Richard Klein has put forth perhaps the most simplistic biologically-determinative õbig bangö theory. Klein (see, e.g., 2000) has argued for years that an unspecified genetic mutation at approximately 50 kya led to the fluorescence of culture and art that one arguably finds in the archaeological record of Europe, the so-called õcreative explosion.ö

Leaving aside for the moment the criticism that this theory remains (even by Kleinøs admission) completely unprovable, the theory does not explain the archaeological record of both Europe and Africa. Recent reassessments of the African archaeological record (McBrearty and Brooks 2000), and further discoveries at African sites (see, e.g., Henshilwood 2002), have undermined the notion of a õcreative explosionö occurring at around 50 kya in Europe. It is no longer sufficient to posit a developmental mechanism that acted quickly on human societies at 50 kya, because such a theory would not account for the elements of õmodern human behaviorö occurring prior to that date. Mithen (2006: 250-251), for one, recognizes this, by noting the significance of the finds in Africa prior to that time.

Unfortunately, moving the date of the genetic mutation backwards in time does not solve the problem. Assume for the sake of argument that such a genetic mutation took place at 80 kya. That might account for the incised ochre from Blombos Cave (Henshilwood 2002) and other elements of õmodern human behaviorö prior to the õcreative explosion,ö but one would then be confronted with the predicament of explaining the relative low level of õmodern human behaviorö reflected in the archaeological record from the intervening 30,000 or 40,000 year period prior to the numerous artistic and symbolic aspects of life after 40 kya.

In addition to those issues, any theory premised on the occurrence of a genetic mutation also needs to explain how that mutation spread throughout the human

population. By the time of the supposed genetic mutation at 50 kya, anatomically modern humans had migrated throughout the world, from today's Spain to China to Australia. If a genetic mutation took place at that time in, for example, the Levant, what was the mechanism by which that new genetic makeup spread across the globe? There are two problems. First, in what way was that mutation so advantageous that it could spread quickly, with all people who did not have the mutation being displaced? Secondly, even assuming that the mutation was highly adaptive, was there sufficient contact among widely-dispersed people such that people with the new genetics could quickly displace all those who came before them?

It is against this backdrop of unanswered questions that Mithen and others must work. Mithen's theory is not the same as Klein's, in that Mithen sees the significant genetic development having occurred by the time of the first anatomically modern humans (i.e. in the range of 170,000 years ago). He then posits a *cultural* mechanism – language – that propels the further development of "cognitive fluidity." To that point his theory avoids the problems that Klein encounters. However, it is not clear whether he is positing a *second* genetic development at approximately the time of the "creative explosion": he writes that those people who were somewhat "fluid" cognitively (e.g. nursing mothers) were able to take advantage of language to better their situations, and that this led to an increase in cognitive fluidity thereafter. Presumably in this view, as with Klein's, there still needs to be a description of how such changes were adaptive, as well as a means by which those more adaptive genes were spread throughout the world.

### 3.	*Difficulties Arising from the Separation of Humans from Animals*

One of Mithen's prime examples of cognitive fluidity is the existence of human-animal composite drawings and carvings. One such carving already noted here is the human/lion composite statuette from Hohlenstein-Stadel cave in the Lone Valley of Southwest Germany, known as the "Löwenmensch." Another example he cites is the "Sorcerer" of Les Trois Frères, with its human-shaped lower body but various animal features (Mithen 1996: 164).   Mithen asserts that the creation of these composite, anthropomorphic beings demonstrates cognitive fluidity because knowledge about humans falls within the domain of "social intelligence," while knowledge about animals falls within the realm of "natural history intelligence." Making a carving of a "lion-man" or a drawing of the "Sorcerer" therefore requires drawing on knowledge from two distinct realms of intelligence (Mithen 1996).

The difficulty with this reasoning is that the Aurignacian person who made this carving may have understood people and animals to be essentially the same, or at least within the same domain of intelligence. Ethnographic accounts from gathering and hunting peoples around the world have shown a dramatic difference between their ontologies and those of people from modern, industrialized countries. It is common among hunter/gatherers to see humans and animals as being simply two different physical forms of the same essence. Ingold (1992) has stated that for modern hunter-gatherers:

> There are not two worlds of persons (society) and things
> (nature), but just one world – one environment – saturated
> with personal powers and embracing both human beings,

> the animals and plants on which they depend, and the
> landscape in which they live and move.

Mithen (1996: 48) is aware of this; in fact he quotes this exact passage from Ingold.

Given the interrelationship and interactions between humans and animals, and assuming that those people had the domains of intelligence that Mithen posits, it seems reasonable to include knowledge of animals may not have been within õnatural history intelligence,ö but rather within õsocial intelligence.ö If the person who crafted the Löwenmensch did not draw a distinction between humans and animals, and had her or his knowledge of animals within the realm of õsocial intelligence,ö then in what sense could this statuette be evidence of cognitive fluidity?

CHAPTER 8
The Existence of Blending and/or Metaphorical Thinking
During the European Upper Paleolithic

1.   *Was the Past Like the Present?*

As noted above, blending theory and metaphor theory have been developed using modern images and languages. Some writers have reached back into earlier historical times, applying blending and metaphor theory to analyses of ancient Chinese (Slingerland 2005) and Roman texts (Wiseman 2007), making a strong case that blending and metaphor have existed for at least a few thousand years.

It does not necessarily follow from that research, however, that humans utilized blending and metaphor to understand and interpret the world around them during the Upper Paleolithic. Clearly, if one surveys the entire history of human evolution from the australopithecines to modern times, there was a time before these cognitive capabilities existed. At some point ó and it may have been a general time period rather than a specific date ó the ability to blend and use metaphor was developed. Moreover, not all blends and metaphors are created equal: intuitively, it seems correct that the ability to perform simple blends and construct simple metaphors preceded the ability to perform more complex metaphor construction and blending, such as double scope conceptual blending.

In this dissertation I seek to apply blending and metaphor theory to the Upper Paleolithic of Europe. That attempt is based on the key assumption that humans living in that era were capable of performing these cognitive operations. Before proceeding to analysis of blending and metaphor usage during that time period, it is important to examine that assumption and evaluate the utility of employing it in the analysis of Ice Age populations.

2.   *Fauconnier and Turner's View that Double-Scope Conceptual Blending Arose Approximately 50,000 Years Ago*

As noted above (see p. 47), Fauconnier and Turner assert that conceptual blending arose from biological changes over the course of human evolution, and that the ability to perform double-scope conceptual blending (DSCB), which is unique to humans, was gained somewhere during the last 50,000 to 100,000 years. The primary evidence of the emergence of DSCB, in their view, is the suite of behavioral traits commonly associated with the European Upper Paleolithic, behaviors such as art, music, religion, and improvements in stone tool technology. In their view this supposed õcreative explosionö or societal õrevolutionö was not possible without the development of DSCB. As an example, they state that õthe 30,000 year-old art of the Upper Paleolithic found on the cave walls of the Grotte Chauvet reflects elaborate creative blending in the mind of the

artistö (Fauconnier and Turner 2002: 36). They also cite the invention of burial rituals, and more generally the concept of living with the dead, as evidence of the existence of DSCB (Fauconnier and Turner 2002: 204):

> The archeological record suggests that such treatment of
> õthe deadö also arose roughly 50,000 years ago. In the
> network for õthe dead,ö one input space has the person
> when alive, and the other input mental space has the
> remains, typically looking as much as possible like the
> living person just before death.

Does the art of Chauvet in fact demonstrate that the people of that time period were engaged in õelaborate blendingö? Can we state with certainty that the blending was of the double-scope variety? These questions underlie much of the later discussion in this dissertation. In order to answer them we need to begin to identify the possible archaeological õsignaturesö of DSCB, and it is important to demonstrate the existence of DSCB in the archaeological record before applying that theory to other features of the archaeological record.

We first need to return to the definition of double-scope conceptual blending. Fauconnier and Turner (2002: 131) define DSCB as follows:

> A double-scope network has inputs with different (and
> often clashing) organizing frames as well as an organizing
> frame for the blend that includes parts of each of those
> frames and has emergent structure of its own.

Turner (2006a: 107) has stated that õthe blend has an organizing frame that receives projections from each of those organizing frames.ö It follows that an analysis of an image, from this point of view, needs to focus on the frames that structure the input spaces, as well as the frame that structures the blend itself. First, one needs to find at least two recognizable input mental spaces, and be able to determine what the organizing frame for each of those input spaces is. Second, one must identify the blend, and also determine what the organizing frame for the blend must be.

All of this needs to be done utilizing only the evidence from the archaeological record itself, as opposed to suppositions about what the Aurignacian people õmust have been thinking.ö To read oneøs own biases into an analysis of the mental spaces and frames raises serious epistemological problems. This seems straightforward, but keeping our preconceived notions about Ice Age life out of the analysis requires rigor and diligence. The archaeological record, in this case, includes most importantly the image itself, but also the related carbon dates, artifacts found in the caves, and the larger set of evidence archaeologists have uncovered about the time period generally.

The Grotte Chauvet contains a wide variety of representations: many different types of animals, abstract symbols, hand prints, etc. The radiocarbon dates from Chauvet show that the earlier artwork in the cave is from the time period between 30,000 and 33,000 years ago (Clottes 2008: 32). This corresponds with the occupation of Europe by

the Aurignacians, the first cultural group of anatomically modern humans in Europe, but it occurred thousands of years after their initial arrival in Europe.

For those reasons, examining the art of Chauvet is a good way to begin an analysis of the earliest proof of double-scope conceptual blending. An analysis of that time period excludes some of the more recent, quite remarkable imagery, such as the Sorcerer of Les Trois Frères or the paintings of Lascaux.

Perhaps the place to begin in Chauvet is with some of the simpler (from the perspective of cognitive science) images, the ones that look to be entirely realistic depictions of animals. An example is a set of horses facing one another, drawn in charcoal in a recess in the Panel of the Horses. See Figure 10 (Clottes 2008: 40).

Figure 10.
Panel of the Horses, Chauvet Cave
(From Clottes 2008: 41)

Here there are multiple horses drawn in great detail and with great realism, in the sense that the depiction accurately reflects how horses look. Surely the artist was intimately familiar with horses in the wild and had the talent to depict them true to life. Aside from the enigmatic red coloring on the muzzles of two of the horses, there does not seem to be anything that does not õfitö with our perception of what those wild horses looked like.

What about this depiction, if anything, indicates conceptual blending and, in particular, DSCB? On a very basic level, any representation involves conceptual blending in that it combines a subject with a medium, such as the subject of õmy fatherö being combined with the medium of camera and photographic paper and chemicals to create a photograph of him. I am able to say, pointing to the picture, that õthis is my father,ö and everyone readily understands what I mean without being fooled that the physical picture is in fact my father himself (see Fauconnier and Turner 2002: 97). It follows that any depiction of the natural world, including a drawing of horses in Chauvet Cave, similarly involves conceptual blending and presupposes multiple mental spaces in the mind of the artist. The depiction of those horses consists of rock and charcoal and tinted minerals, while the image-maker also necessarily had a mental space for the real

animals (which mental space itself might have been a composite of multiple images of horses, or images of horses in different settings or seasons). Those input mental spaces are blended, creating the images of the animals on the cave wall.

But even if we presuppose those multiple mental spaces, there is no indication that DSCB is taking place in the mind of the creator of an entirely realistic depiction. The mental space of the real animal would be structured by the frame for that animal, for example, 'horse' or 'bison.' The mental space of the depiction would be structured by the frame, presumably, of 'painting on rock surface,' with elements such as the paint material and the characteristics of the rock, its hardness, porousness, receptivity to pigment, etc. But if what we get from these two mental spaces is a blend of 'horse' or 'bison,' what we can say with confidence is that blend is structured by the frame of 'horse' or 'bison,' not by anything about painting on rock. If so, it would not be a double-scope conceptual blend, but rather would be of the 'single-scope' or 'mirror' varieties (Fauconnier and Turner 2002: 122-131). There would be a material anchor for that conceptual blend, namely, the painting (Fauconnier and Turner 2002: Chapter 10 ; Hutchins 2005).

The same analysis would apply to a panel containing depictions of a number of animals, all of which are depicted realistically. There are many such panels in the prehistoric caves of Europe, panels with multiple animal depictions yet not truly depicting a 'scene.' An example from Chauvet is the Reindeer Panel shown in Figure 11 (Clottes 2008: 108-109). The fact that more than one animal is in the overall panel does not seem to necessitate DSCB.

Figure 11.
Reindeer Panel, Chauvet Cave
(From Clottes 2003: 108)

Ice Age artists very often took advantage of the natural contours of the rock surface. From our point of view this is an enhancement of their images, in that it lends them a three-dimensional look, though they may have understood the process quite

differently, e.g. as õreleasingö the image from the rock. An example from Chauvet is the large bear painted in red, Figure 12.

Figure 12.
Red Bear, Chauvet Cave
(From Clottes 2008: 33)

In this case the image-maker used the natural relief in the wall to form the shoulder of the largest bear. Although such depictions are clever, there is no indication from the image itself that they involve DSCB. The relief heightens the realism of the image, but does not necessarily require multiple mental spaces with different frames.

That being said, it is important to note that the fact that an image is rendered õrealisticallyö does not *preclude* the existence of DSCB. Other aspects of the artistsø world view, and even the physical elements of the image itself, could reference much more complex understandings of the art. For example, it is possible that the rock surface itself was meaningful to these people; perhaps it was understood as a membrane separating the world inhabited by humans from a spirit world or a world from which the animals emerged, as suggested by Lewis-Williams (2002: 148-149). Other elements of the archaeological record may indicate that such an understanding exists, such as the painted and reverse-image hand prints that are found in many painted caves and rock art sites, including Chauvet (see Figure 13), and bones that have been stuck into cracks in the walls of certain caves (Clottes 2009).

Figure 13.
Hand Prints, Chauvet Cave
(From Clottes 2008: 34)

If this understanding existed in the cosmology of a people, then even a so-called realistic depiction might involve metaphors or blends, including DSCB. Similarly, a sign we consider abstract, associated with an otherwise-realistic depiction of an animal, could indicate a much more complex understanding of the depiction (see Figure 14).

Figure 14.
Abstract Sign, Lascaux Cave
(From Clottes 2008: 111)

Moreover, the materials used in the creation of an image might have had some significance, and thus the frame of the mental space for the materials used might in turn be part of the structuring of the blend that is the image. As Conkey (1993) has noted with regard to the pigments used in parietal art:

> There might have been seasonal recipes or pigments
> associated with a certain event; or there might have been

<blockquote>
specific mixes associated with particular individuals, groups, genders, or clans.
</blockquote>

Any of those possibilities would suggest that DSCB is taking place. Finally, it could have been that the act of painting itself was the goal, as opposed to the final image, in which case the image could be a DSCB of the animal, the materials/surfaces used to create it, and the gestures and movements by which it was created.

And what should we make of bas relief depictions of animals, sculptures in which the animals are literally embodied in the rock as opposed to being drawn upon it? An example would be the magnificent relief carvings of Cap Blanc, from the French Perigord and dated to the Magdalenian period (Figure 15).

Figure 15.
Cap Blanc (Partial View)
(From Leroi-Gourhan 1965: 70)

Does this indicate additional projections from the mental space of the image to the blend of the animals? Can the same argument be made of portable sculptures, such as the Löwenmensch?

Continuing our movement across the spectrum from single, õrealisticö animal depictions to more complex images, we might consider images of animals that are largely realistic but that *also have certain stylized elements*. For example, many of the rhinoceroses painted in Chauvet have a specific style of ear (see Figure 16).
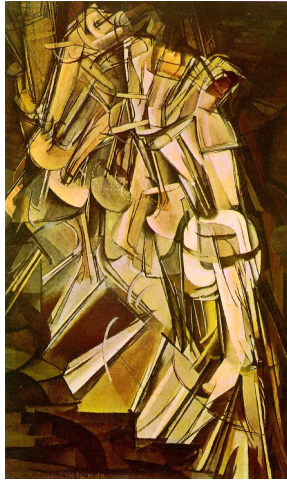
Figure 16.
Rhinoceros Panel, Chauvet Cave
(From Clottes 2008: 44)

This may indicate that a single artist created all of these images, or that multiple image-makers were following a shared convention, but in any event they are not entirely õrealisticö because of that feature. Here too, it is difficult to see any DSCB.

A similar example, from a more recent time period, is the tradition of painting the horns of animals in a twisted view or perspective. The animal is seen directly from the side, but the horns seem to be partly turned toward the viewer (see Figure 6). According to Clottes, as stated in his 2009 lecture at the University of California, Berkeley, this style of depiction was common during the Gravettian period, perhaps 26,000 to 28,000 years ago. Turner (2006a: 99) argues that this depiction requires a mirror integration network (as opposed to DSCB), with many different views compressed into a single image, all views sharing a single organizing frame.

Yet another example of a mirror integration network would be sets of images that depict motion. Turner (2006a) discusses the famous Marcel Duchamp painting of õNude Descending a Staircaseö (Figure 17) in the following terms:

> In this case, the compressed blend has elements that come
> from different temporal moments of watching the nude as it
> descends the staircase. In the blend, but in none of the
> inputs, we have an extremely familiar conceptual unit, *the
> descent*, which remains connected to the different temporal
> moments. This unity-out-of-diversity can be expressed
> visually in Duchampøs fashion or linguistically by means of
> a definite noun phrase: õthe descent.ö Duchampøs blend
> has emergent properties not possessed by any of the inputs.
> For example, in the blend, but in none of the inputs, we
> have a static form for the line of descent of the head.

66

Figure 17.
Marcel Duchamp, Nude Descending a Staircase.
(From http://www.casbs.org/~turner/art/turner_images/index.html)

In Chauvet, we find a rhinoceros image that may depict motion (see above, Figure 16). Clottes (2008: 40) describes this image as representing a herd of rhinos, and clearly the artist has drawn multiple, parallel backs and multiple horns. But there are more horns than backs, suggesting that some movement is also being depicted here. If so, motion of this type would be built upon a mirror integration network similar to the movement of Duchampøs Nude. Yet, still no DSCB.

Among the many images in Chauvet we also find õscenes,ö that is, depictions of animals in locations where events or action take place. These could be animals interacting with each other, or the depiction of some recognizable event. Naturalistic scenes are rare in European cave art (Clottes 2008: 38), but in Chauvet there is a panel depicting two rhinos, face to face, with horns crossed, as though they are fighting (see Figure 18).
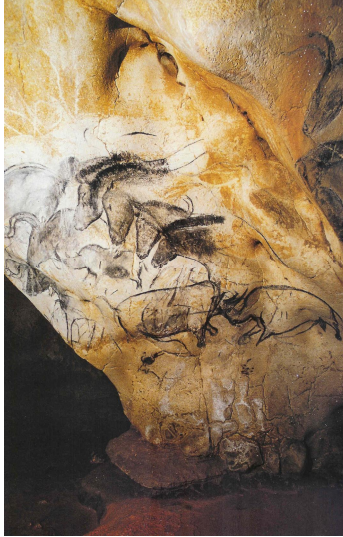
Figure 18.
Chauvet Panel with Fighting Rhinos
(From Clottes 2008: 39)

Although more complex than the examples considered above, it is still difficult to see how this scene could be evidence of DSCB. If seen individually, neither of the two rhinos appears to be much different than any of the other rhinos depicted in Chauvet. The stance of the rhino on the right does indicate motion and tension, and perhaps aggression, but the one on the left would not attract special attention (among the already incredible works in this cave!). I would argue that this image is framed by the notion of animals fighting or, more specifically, rhinos fighting. Even if we were to conceive of it consisting of multiple mental spaces, it's not clear what two frames are being melded to create a new frame with the elements of both.

Another image in Chauvet that might be considered a "scene," despite being the depiction of a single animal, is the rhinoceros with red marks in the End Chamber, shown in Figure 19.

Figure 19.
Rhinoceros, from Chauvet Cave
(From Clottes 2008: 51)

A number of red, curved lines descend from the mouth as if it were spitting blood (Clottes 2008: 50). The artist also used red marks on its head and its body. Could this be a wounded animal? If so, the case for DSCB appears to be weak. It is possible that the õrhinoö could be a spirit-form that a shaman experienced while in a trance, with the õbloodö what was produced in the shaman. This would make a stronger case for DSCB, but requires that elaborate assumption. A similar situation exists with regard to other, more recent images, such as those of bison with possible arrows in them, from Niaux or Les Trois Frères (Figures 20 and 21).

Figure 20.
Bison, Niaux Cave
(From Clottes 2008: 197)
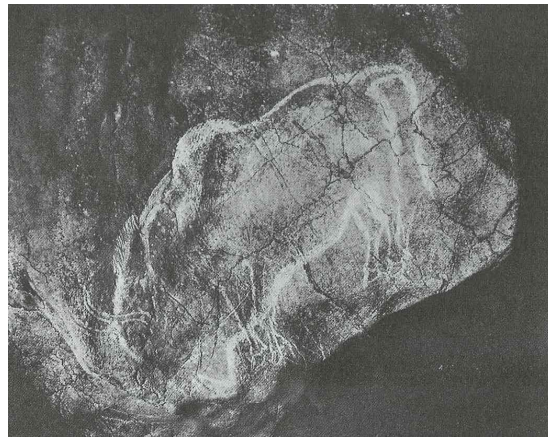
Figure 21.
Engraved Bison in the õSanctuary,ö Les Trois Frères
(From Bégouën 1958: P. XVI)

A more complex scene in Chauvet is the Panel of the Lions, which includes the depiction of seven bison apparently being pursued by a pride of sixteen lions, the lions being shown in Figure 22.

Figure 22.
Panel of the Lions, Chauvet Cave
(From Clottes 2008: 49)

      The superimposition of animals, which is extremely common in Paleolithic art, presents us with another example of imagery that does not require the existence of DSCB, although such complex blending could be occurring. There are many caves with multiple depictions of animals, one over portions of another, possibly drawn at different times or perhaps drawn as part of a single representational act. The jumbled imagery of Les Trois Frères or Gargas would be cases in point, the latter dating from the Aurignacian period. In Chauvet there are also images sitting on top of each other, such as those shown in the bottom portion of Figure 16, above. It could be that superimposition, at least in some cases, could have been linked to concepts such as the meaning of the rock faces and the emergence of animals from another world, but those interpretations cannot be used as evidence of the existence of blending.

      Similarly, the use of various colors and techniques could have been extremely meaningful to the people of the Ice Age, but without a solid justification for linking those colors and techniques to a complex integration network, they cannot be used as evidence of DSCB. Examples from Chauvet would include the possible depiction of an animal using large red dots instead of lines (Figure 23):
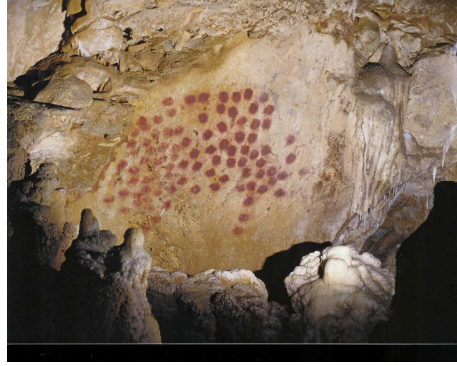
Figure 23.
Red Dots, Possibly an Animal, Chauvet Cave
(From Clottes 2008: 33)

the use of red pigment instead of black, as in Figure 13, above; or engraving vs. painting (Figure 24).

Figure 24.
Engraving and Painting, Chauvet Cave
(From Clottes 2008: 52)

Was there significance to touching the wall or cutting into it?

By this point in the discussion, it may not seem likely that we will find imagery that, on its own and without importing any interpretations, definitively indicates that DSCB was taking place in the mind of the artist or of her audience. But we have thus far not discussed a critical type of Paleolithic representation, the composite figure. Would the creation of an image of two animals, melded together into a being that clearly did not exist in nature, clearly indicate that the artist (and/or her audience) was blending two mental spaces with different frames into a blend that imported aspects of each of the frames?

Stepping outside of Chauvet but remaining within the Aurignacian time period, consider once again the Löwenmensch of Hohlenstein-Stadel Cave, SW Germany, Figure 9, above. Clottes (2008: 54) poses several questions about this image:

Could this figure be a shaman partially transformed into a
lion? A mythical being, a hero or a god? Or perhaps a
supernatural spirit?

While there is debate over the sex of this creature (Clottes 2008; White 2003), there is no
doubt that it is both animal and human at the same time. This is true regardless of which
of Clottesø suggestions might be correct. To create a sculpture of such a composite
being, the artist had to have a conception ó a blend ó of that being in his mind. That
blend, in turn, and leaving aside any mental spaces involving the material and tools used
to create the figurine, would have been an integration of at least two mental spaces, one
for õhumanö (perhaps õmanö or perhaps õwomanö) and one for õlion.ö The frames of
human and lion, respectively, would have structured those mental spaces, and elements of
those mental spaces would have been projected, along with their different frames, into the
blend. Exactly what the blend consisted of ó whether it was one of Clottesø suggestions
or something else ó we cannot know at this time. Nor can we know the significance of
the head being from the lion and the body being from the human race, as opposed to the
other way around. But in each of those cases the being, whatever it was, had some
characteristics of lions and some characteristics of humans. Its actions would have been
manifestations of that dual nature, it would certainly have had some of the abilities of
lions, and some of the abilities of humans. The blend of which it was a representation
would have been structured by a new frame, that of õlion-person,ö and the activities in
which this being engaged would have drawn on that dual nature. This sculpture is strong
evidence that the people of that time period engaged in DSCB. Turnerø (2007) analysis
of Selkies, composite beings in the folklore of the Orkney Islands said to have some
characteristics of seals and some of humans, and the ability to switch from one to the
other, is applicable here.

Returning to Chauvet, we find a composite being of a different sort. On a large
rock formation that hangs down toward the floor of the cave, there is an extraordinary
image that appears to be a combination of a lion, a bison, and a woman (see Figure 25).
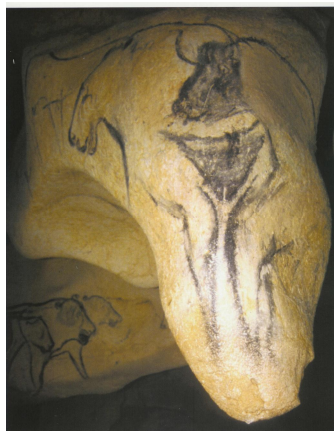
Figure 25.
Possible Composite Being, Panel of the Sorcerer
Chauvet Cave
(From Clottes 2008: 51)

The lower half of the image likely depicts two legs of a woman, without feet, and that woman's pelvic area. However, one of the legs flows seamlessly into the lion, and the other into the bison. Descriptions of this image (see, e.g., Clottes 2003: 70) include the statement that the bison's arm has a human hand at its end, which is above what might be the woman's knee, though I find that difficult to see. That human hand on the bison is taken as evidence that the bison figure is actually a composite bison-human.

If the bison-human composite interpretation is correct, then this image would be evidence, like the Löwenmensch, of a double-scope conceptual blend. Alternatively, if we take the image as a whole, one could make the argument that there are three different types of beings involved and that they share portions of their bodies with each other. While it is possible that this composition resulted from attempts to paint a human and two types of animals separately, more likely the artist had some more complex idea in mind. Such a composite animal would be more mysterious than the Löwenmensch in that its parts don't fit together into a single animal, an animal with a single head and a single set of limbs, but it would also be evidence of DSCB. However, there may also be evidence of erasures and obliteration of previously-existing lines (Clottes 2003: 170), so even that conclusion is subject to further evaluation.

The female form has also provided us with another candidate for a blending analysis. Nick Conard of the University of Tübingen, Germany, announced in May 2009 the discovery of a female figurine from the Aurignacian layers of the cave of Hohle Fels, in the Ach Valley west of Ulm, Southwest Germany (Conard 2009)(see Figure 26). The figure was composed of six fragments of carved mammoth ivory, which were found approximately 3 meters below the modern floor of the cave, about 20 meters from the entrance. The figurine is nearly complete, missing only its left arm and shoulder (which may yet be recovered in future excavations). It is roughly 6 cm long by 3 cm wide. Conard contends that the figurine dates from at least 35,000 calendar years ago, and may be closer to 40,000 calendar years old.

Figure 26.
Venus Figurine, Hohle Fels Cave, Germany
(From Conard 2009)

This figurine is reminiscent of other famous figurines dating to the more-recent Gravettian period. It has exaggerated breasts, broad shoulders and wide hips, yet short arms with carefully carved hands, short legs, and buttocks and genitals depicted in detail. For our purposes, Conardøs comments (2009: 250) on these exaggerated features are important:

> There can be no doubt that the depiction of oversized breasts, accentuated buttocks and genitalia results from the deliberate exaggeration of the sexual features of the figurine.

There are numerous lines and markings on the figurine. The figurine has no head, but instead a ring, possibly used to suspend the figurine as a pendent.

From a blending perspective, this piece of art is unlike the others discussed above. In contrast to the Löwenmensch or the possible bison-human from Chauvet, it does not combine features from two different animals. Rather than the õrealisticö depiction of a reindeer, horse or other animal, it has exaggerated features that do not appear, on that scale, on a human female. It is neither a composite nor a realistic depiction, but a depiction with certain features exaggerated.

Conard states (2009: 251) that õalthough there is a long history of debate over the meaning of Palaeolithic Venuses, their clearly depicted sexual attributes suggest that they are a direct or indirect expression of fertility.ö Letøs assume for the sake of analysis that this interpretation is correct: what blending network would be required to create such a figure? Perhaps this would be a blend of multiple mental spaces containing images of pregnant or nursing women of various dimensions, all of which are structured by the frame of the õpregnant/nursing woman.ö The artist here chose to exaggerate those features of the female body that she or he felt were relevant to successful reproduction and survival of the population. I would argue that this is not evidence of DSCB, but rather most likely a mirror integration network, in that the various input spaces would all be structured by the frame of the õpregnant or nursing woman.ö

If this figurine were hung as a pendent, other interesting issues are raised. In that case, the person wearing the pendent may have done so as part of creating his or her identity, he or she would have been drawing some connection between that depiction and the identity he or she was seeking to create (a blending analysis of identity is presented below, at p. 137).

The sediment in Hohle Fels cave has yielded another intriguing set of artifacts from the Aurignacian in recent years that may suggest additional evidence of DSCB: a fairly complete flute made of bird bones, and fragments of what appear to be flutes made from mammoth ivory (Conard, et al. 2009). These new discoveries, along with the recent discovery of fragments of an ivory flute from Vogelherd Cave in the Lone Valley not far away, complement earlier finds of flutes from Vogelherd and Geissenklösterle. Conard and his colleagues argue that the Hohle Fels flutes date to approximately 40,000 calendar years BP, and that õwe can now conclude that music played an important role in Aurignacian life in the Ach and Lone valleys of southwestern Germany.ö Music arguably involves a complex web of metaphors and blends (Zbikowski 2006), and this may well be further evidence of blending during the early Aurignacian in Europe.

Human burials are another aspect of the archaeological record during the early Upper Paleolithic that could demonstrate the existence of DSCB at that time. Fauconnier and Turner (2002: 204) contend that the õstriking singularities of cognitively modern human beingsö that arose from DSCB õapplies equally to the invention of burial rituals and, more generally, to the invention of the concept of living with the dead.ö The blending network for õdead person,ö they argue, has one input space containing the person while still alive, and the other input space has the remains of that person. Those two input spaces are connected in various ways (Fauconnier and Turner 2002: 204-205):

> The person and the remains are causally related; they are also related by physical change; and they can be related by disanalogy ó for example, the person moves but the corpse does not. The body is a part of the person in the input with the living person, so there is a physical relation of change between the body-as-part in one input and the corpse in the other. There is also a strong literal similarity between the body-as-part and the corpse. In the input with the living person, the body and the soul ó or, if you prefer, the intentional aspect of the person ó are inseparable. In the blend, we have a being who has some intentionality projected from the space of the living person, and so might, for example, have some of the living personøs memories, interests, and psychological characteristics. The blend has, typically, the temporal moment taken from the present mental space with the remains. The outer-space disanalogy connector between the inputs ó the person was vital but the remains are not ó is compressed into an *absence* inside the blend. The dead person in the blend is an absence, felt as such, but with projections from the space of the living person.

The double-scope conceptual blend for õdead personö then makes possible the notion of õliving with the dead,ö which itself is a conceptual blend. People donøt actually live with the dead, literally speaking, in the same way that they live with other people who are alive. The dead are not physically present in our lives and we cannot interact with them in the manner that we interact with living people: we cannot ask them questions and have them answer, we cannot ask them to give us a ride to the grocery store, etc. But in that second conceptual blend, the blend of õliving with the dead,ö we can interact with them on some level, we can seek their advice and guidance, we can seek to avoid their wrath, and so on (Fauconnier and Turner 2002: 205).

We also create material anchors for our blend of õliving with the dead,ö such as cemeteries and tombs. Fauconnier and Turner (2002: 205) describe the function of such material anchors in the following way:

> The projections are relatively straightforward. Since the living personøs body is mapped onto the corpse, a place

where you might encounter the living person (i.e. a place where her or his body might be) is mapped onto the place where the corpse õisö ó the grave. We project from the space of the living person the notion of establishing contact with the person, and from the other input the place where that contact is best established ó the grave marked by the tombstone.

When we turn to the archaeological record, the first distinction we need to make is between intentional and unintentional burials. Some of the burials we find from Paleolithic times appear to have been the result of natural phenomena such as landslides, which of course would not provide evidence of conceptions of life after death or õliving with the dead.ö Other burials appear to have been intentionally made by the relatives or group members of the deceased, but here we need to distinguish between the intentional burials that contain evidence of symbolism and those that do not. A burial could be intentional and yet have been performed for reasons of sanitation or avoiding attracting predators to a location. In order for us to entertain the notion that a people intended to õlive with the dead,ö we need to find archaeological evidence showing more than simple interment in the ground, we need to find something that indicates an importance being imputed to what occurs after death.

Burials of this latter type have been found in connection with the remains of anatomically modern humans. One of the earliest comes from the site of Sungir in Russia, and is dated to between 25,000 and 22,000 years ago (White 2003: 141). This is the Gravettian period, not the period of the first intrusion into Europe by anatomically modern humans, and certainly nowhere near the 50,000 year time frame stated by Fauconnier and Turner. At this remarkable site õthe three most intact skeletons were lavishly decorated with a total of more than 13,000 painstakingly prepared ivory beads arranged in dozens of strands, perhaps basted to the clothing of the dead.ö One skeleton, that of a 60 year old man, was decorated around the forearms and biceps with õa series of polished mammoth-ivory bracelets (twenty-four in all), some showing traces of black paint, others red. Around his neck, he wore a small, flat schist pendant painted red, but with a small black dot on one sideö (White 2003: 142)(see Figure 27).

Figure 27.
Skeleton from Sungir
(From Burenhult 1993: 138)

Certainly these features suggest that the people of Sungir had some conception that what happened after a person's death had meaning, and archaeological features such as these provide a good argument that DSCB was taking place during this time period.

It is debatable whether burials prior to the Gravettian similarly manifest a symbolic component. Researchers at Qafzeh cave, Israel, found almost three dozen partial skeletons that have subsequently been dated to between 90,000 and 100,000 years ago (Johanson and Edgar 1996: 239). One of those skeletons, named Qafzeh IX, was part of a double burial. Her skeleton lay on its left side, and the skeleton of a very young child lay beside her flexed lower legs. One can imagine both blending-based reasons and efficiency-based reasons for this arrangement; the evidence is inconclusive. Similarly inconclusive is the set of presumed burials at Morin Cave, Spain, found in association with Aurignacian implements and a possible animal burial (Freeman and Gonzalez Echegaray 1970).

In considering the origins of conceptual blending, it is worth commenting on the relative beginning dates of DSCB as opposed to metaphor. While a full exploration of that topic would be the subject of a different dissertation, intuitively it seems correct that primary metaphors, being based on physical relationships commonly encountered in the world, preceded the development of more complex DSCB. The advent of DSCB may have required increases in "working memory" (Coolidge and Wynn 2009).

PART III

APPLICATION OF METAPHOR AND BLENDING THEORIES TO THE EUROPEAN ICE AGE

CHAPTER 9
Case Study: The "Sorcerer" of Les Trois Frères

1.   Introduction

Having looked generally at the Contemporary Theory of Metaphor and Conceptual Integration Theory and their relation to Mithen's "cognitive fluidity," I would now like to attempt to apply those theories to case studies from the European Upper Paleolithic. The goal of this exercise is to provide a real-world test of how useful those theories might be in understanding how certain images and objects might have been meaningful to the people who created them and encountered them.

The first of the two case studies involves the famous image of the so-called "Sorcerer" from the cave of Les Trois Frères, Ariège, France. That image is found in a deep chamber within the cave, which is traditionally referred to as the "Sanctuary." For clarity of reference I will use those names in this discussion, while recognizing that they imply certain interpretations that may not be warranted.

My analysis will be broader than simply considering the Sorcerer image itself. On the contrary, I suggest that it is important to consider that image in the context of the other images in the Sanctuary and in the rest of the cave, and it is important to try to see the imagery of the Sanctuary and the cave in the broader context of the landscape surrounding the cave: a "multi-scalar" approach (Lightfoot, et al. 1998). Inasmuch as the theory of meaning that underlies metaphor theory concerns the bodily interaction that people have with the world, I will also consider the physical motions and movement through space that are required in order to access the cave and to bring a person to the point at which he or she can engage with the Sorcerer.

2.   The Sorcerer of Les Trois Frères and its Setting

(a)   The Setting of the Cave.

The cave of Les Trois Frères is located in southern France, in the foothills of the Pyrenees mountains, approximately sixty-five kilometers south of Toulouse. Today this is a land of ridges, rolling hills, small towns and farms, but 14,000 years ago it was a more desolate place, a sub-arctic steppe environment, with glaciers and glacial moraines reaching north from the high peaks. That was the tail end of the Ice Age: the Last Glacial Maximum had passed, and the Pleistocene was slowly warming toward the Holocene, with oscillations of cold, but for the people living in the foothills of the Pyrenees the intense cold remained an inconvenient truth.

Archaeologists refer to the people of that time and place as "the Magdalenians," using the name given to their archaeological industry or tool culture. The Magdalenians were a highly mobile people who lived by gathering and hunting, and they created a rich

material culture of worked stone, bone and antler. The vast majority of Paleolithic representations, imagery and art are attributed to them. These people were anatomically modern, with bodies and brains identical to those of people alive today. But while their brains and mental processes were the same as those of people today, given their cultures and lifeways they undoubtedly perceived the world differently than we do. One might say that, structurally, they *thought* the way we think, but their *thoughts* may not have been like ours.

Les Trois Frères (Ariège) is one of three adjacent caves in the valley of the Volp river, the other two being Le Tuc d'Audoubert (Ariège) and Enlène (Ariège). Enlène (Ariège) and Les Trois Frères (Ariège) are actually connected, and perhaps are more appropriately understood as a single cave. During the Paleolithic – and this remains true today – people could gain entrance to Les Trois Frères through Enlène via a narrow passage 60 meters long (Bégouën and Clottes 1987).   The Volp disappears underground near these caves, reappearing further downstream through the mouth of Le Tuc d'Audoubert. If this was also the case 12,000 to 14,000 years ago, it may have had significance in the cosmology of the people who passed through this region.

(b)   The Sorcerer Image.

The Sorcerer image is located deep within the cave of Les Trois Frères (Ariège). This is a composite figure, mixing both human and animal traits. It is the only image in that particular chamber of the cave (the "Sanctuary") that is both painted and engraved (Bégouën and Breuil 1958, reprinted 1999; Breuil 1952). See Figure 28:

Figure 28.
The "Sorcerer" of Les Trois Frères
(From Mohen 2002: 183)

The precise components of the Sorcerer are subject to some interpretation. André Leroi-Gourhan, the famous French archaeologist, wrote (1965: 367) that "his horns and ears are those of a reindeer, his body is that of a man, his tail that of a horse, and his penis, though human, is placed where a feline's would be." Pierre Mohen (2002: 185) has written that the Sorcerer has a "human beard, legs and feet, he has the antlers and ears of a deer, the face of an owl, a horselike tail and the sexual organs of a big cat." The Abbé H. Breuil (1952: 176) provided this description:

He is 75 cms high and 50 cms wide, he is entirely engraved, but the painting is unequally distributed: on the head there are only a few traces, on the eyes, nose, forehead and the right ear. This head is full face with round eyes with pupils; between the eyes runs a line for the nose, ending in a little arch. The pricked ears are those of a Stag. From a black painted band across the forehead rise two big thick antlers with no frontal tines but with a single short tine, fairly high above the base of each branch, bending outwards and dividing again to the right or left. This figure has no mouth, but a very long beard cut in lines and falling on the chest. The fore-arms, which are raised and joined horizontally, end in two hands close together, the short fingers outstretched; they are colourless and almost invisible. A wide black band outlines the whole body, growing narrower at the lumbar region, and spreading out round the legs which are bent. A spot marks the left knee-joint. The feet and big toes are rather carefully made and show a movement similar to steps in a õCakewalkö dance. The male sex, emphasized but not erect, pointing backwards but well developed, is inserted under the bushy tail of a Wolf or Horse, with a little tuft at the end.

Vialou (1986) also studied the Sorcerer in depth, and provided these additional comments:

We don't have to go over the Abbé Breuil's perfect description of it. However we should notice that only the legs look unambiguously ó and even more so than in the hybrid being *[the "petit Sorcerer" with the "musical instrument"]* ó human. . . . The upper body is much less clear though, because down to its waist it has a human outlook while the thorax and shoulder have an animal body shape. At the Trois-Frères the facial view of the figure is not surprising at all, since it's also true for all the cats and the two owls. Magdalenian man played with the human facial expression of these two different animals because of their eyes' position and shape. The tail doesn't look completely realistic. It reminds us of a fox or a wolf's tail more than any other animal. The sex, often compared to a cat's, is problematic since this animal's penis is not visible sideways. Only the testes are partly visible. (*Translation by Sergio Pinheiro*).

Adding to the complexity of the image is the nature of the rock surface on which it was placed. The majority of the Sorcerer's body lies in a concave section of the limestone, the rock bending inward right at the Sorcerer's knees and then curving back outwards toward its head. Within that overall concavity, the surface of the rock is undulating and multi-faceted, to the extent that when light is projected from the side, small shadows are cast by the convex portions of the rock. See Figure 29:

Figure 29.
The "Sorcerer" of Les Trois Frères, Lighting from the Side. (From Leroi-Gourhan 1965: 126)

A photograph taken "straight-on" does not capture the surface of the rock, and in any event such a photograph will show only a portion – which portion depends on the angle of the light – of the engraved aspects of the image.   For this reason both the straight-on pictures and the famous "direct tracing" by Breuil (see Figure 30) are somewhat misleading as to the nature of the image.

Le Dieu cornu, relevé Breuil, d'après son décalque direct.
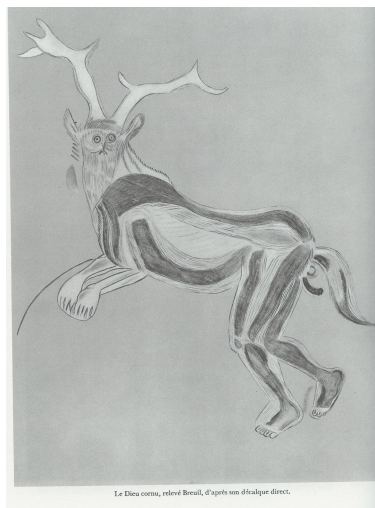
Figure 30.
Breuil's Tracing of the "Sorcerer" of Les Trois Frères
(From Bégouën 1958: Pl. XX)

Even aside from the fact that it does not capture the undulating rock surface, Breuil's tracing of the Sorcerer image, which has been duplicated in countless books, is open to some question with regard to its accuracy. Reproductions of images by people tend to reflect their stylistic preferences, and Breuil sometimes had a tendency to embellish and organize images he recreated (Bahn and Vertut 1988). Add to that the difficulty of accessing the Sorcerer, in that it is perched high on a wall behind an outcropping, and the ever-present difficulty of actually seeing all of the engraved lines on any cave wall and distinguishing them from the natural cracks and fissures in the limestone. The photographs of the image do not allow the viewer to discern whether the antlers are actually engraved on the rock or whether Breuil mistook natural fissures in the rock for human-created incisions. During my visits to the cave I could not discern the engraved antlers at all from down below, although that fact does not resolve the issue because I was illuminating the image from my own angle of viewing and those engravings may only be visible when illuminated from the side.

What Breuil attempted to do is extremely difficult, and it would not be surprising if his tracings did not match the actual figure in every detail. Bégouën and Clottes (1987) note that Breuil's tracings in Les Trois Frères were not always redrawn until years later, and some were redrawn by people other than Breuil such that "some mistakes" and "quite a few discrepancies" were found when they were compared to the originals.

That being said, those who know the image best believe that Breuil's tracing of the Sorcerer is accurate. Both Robert Bégouën and Jean Clottes have told me, in personal conversations, that they believe the tracing of the Sorcerer to be accurate. Breuil (1952) spent one month per year over the span of ten years in the cave, and Clottes emphasized to me that Breuil spent more time working in the Sanctuary than in other parts of the cave.

Although the Sorcerer image has been duplicated in numerous books and utilized as evidence of various theories (see, e.g. Mithen's *Prehistory of the Mind*), little has been said in the archaeological literature about its meaning. Breuil (1952: 176) stated the following:

> Such is the Magdalenian figure considered to be the most
> important in the cavern and which, after much thought, we
> consider to be the Spirit controlling the multiplication of
> game and hunting expeditions.

This is consistent with the "sympathetic hunting magic" explanation for Ice Age art, an explanation Breuil promoted (White 2003). Breuil (1952: 176) also stated that the Sorcerer image "dominates" the Sanctuary,[7] and he wrote that the Sorcerer "presides over all the animals" in the Sanctuary, which are important assertions regarding the spatial construction of that chamber and the relationship of the images within it.

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[7] Curiously, the assertion that the Sorcerer "dominates" the Sanctuary does not appear in the English translation of Breuil's work. Breuil stated it in the original French version, as follows: "elle domine de près de 4 mètres, dans une position apparemment inaccessible, . . . "

<u>(c)   The Ambiguous Location of the Sorcerer</u>

The topographic contours of the cave of Les Trois Frères (Ariège) are not easily described. It has a broad spectrum of internal configurations and shapes: a small hole for an entrance leading to a steep drop into the adjacent chamber, a narrow passage through which one must crawl, both a cozy side room and chambers with high ceilings, sections with level floors that are sometimes slippery but generally easy to traverse, but also a ledge over a precipitous drop. There do not seem to be any simple cylindrical or rectangular shaped chambers, but rather odd shapes, swirling ridges, and sculpted forms. The cave is approximately 300 meters deep from the current entrance to the deepest point.

Items of great interest are located throughout the cave. Relatively close to the present day entrance[8] is the chamber referred to as the "Chapel of the Lioness," containing an engraved lioness with cut marks on her body and indentations, apparently made by striking the image with stones or other hard objects, as well as pieces of flint and fossil shells stuck into niches in the walls. Near the deepest part of the cave one finds the Gallery of the Owls, containing engravings of owls – a rarity – overlain with an engraving of a mammoth. Between and below those locations lies the area known as the "Sanctuary," in which the Sorcerer image is found.

The Sanctuary is lower than the rest of the cave. To gain access to it, you must carefully crawl down a series of steep ramps of earth, known fairly descriptively as the "Cascade," that are perhaps three meters wide and twenty meters from top to bottom. From the top of the Cascade, it appears as though the descent will be very tricky, and that surely the group of visitors will tumble into a confused pile at the bottom. Fortunately, the clay-like soil is somewhat adhesive and abrasive, and with the additional help of some carved footholds the descent proves not to be difficult at all.

From the base of the Cascade the floor of the Sanctuary slopes gently downward, over curved ridges of sediment, perhaps 15 meters to its far end. Its shape has been compared to that of a brioche or a bell, since it has a relatively wide base at the Cascade end and a tapered far section. There is no true ceiling to this chamber; rather, the rock walls swirl upwards in ridges and arêtes, eventually opening into the higher portions of the cave near the ledge leading to the furthest reaches of the upper cave.

Facing into the chamber from the bottom of the Cascade, one sees a series of outcroppings of rock projecting inward from the left side, and a single, large outcropping projecting inward from the right. The right outcropping pushes inward just prior to the final left-side outcropping, i.e. between the final and the second-to-last left side outcroppings. The net result of these outcroppings is that the far end of the Sanctuary, where the Sorcerer and many important engravings are located, almost constitutes a separate sub-chamber, in the way that a portion of a Japanese living room might be partially separated off by shoji screens. Moreover, the outcroppings, and particularly the outcropping on the right side, are not cleanly vertical but rather have uneven edges, resulting in varying lines of sight to the end of the Sanctuary depending on the location from which the visitor is looking. In other words, because the floor of the Sanctuary and

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[8] In Magdalenian times, people more likely entered Les Trois Frères through Enlène.

the Cascade behind it slope downward, as one approaches the end of the Sanctuary one goes downward in elevation, changing one's relation to the right-side outcropping and therefore changing the portions of the far wall that are open to direct observation. In that final, imperfectly sequestered and confined space the walls envelop the visitor, and there are low passages leading into and behind the wall and thereby into small spaces behind it. See Figure 31:
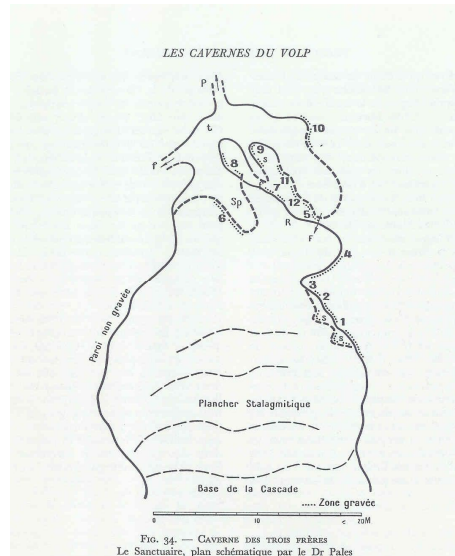
Figure 31.
Schematic Map of "Sanctuary" of Les Trois Frères
(From Bégouën 1958: 32)

It is behind those outcroppings and above those overhangs at the far end that we find the Sorcerer image itself. It was placed in a location that is partially obscured by the final left-side outcropping, which stands a few feet in front of the wall on which the Sorcerer was placed. The image is also obscured by the right side outcropping if one stands toward the right side of the chamber.   There is only a narrow band of potential body positions extending from directly under the Sorcerer, back across the length of the Sanctuary, and up the Cascade, from which one can see the entire Sorcerer image. From any other position on the Cascade or in the Sanctuary one can at best see a portion of the Sorcerer image, and from many locations in the chamber it is entirely hidden. See Figure 32:

Figure 32.
View of the õSanctuary,ö Les Trois Frères
(Note õSorcererö top center)
(From Bégouën 1958: Pl. XVIII)

It is actually possible to obtain a direct line of sight toward the entire image from a spot at the very top of the Cascade, if one kneels or squats down up there.

It is important to remember that all viewing of the image presupposes the existence of suitable lighting. The Sanctuary is of course completely dark. Your ability to see the image from various locations depends on the type of light you bring with you. It takes a strong modern flashlight beam trained on the Sorcerer to see it from the top of the Cascade, and clearly such a view could not have been obtained with a Paleolithic torch or oil lamp held in that location. On the contrary, with an Ice Age lamp, which casts diffuse light upwards, or with a torch, one could not see the Sorcerer from that location unless someone was holding a lamp or torch directly beneath it.

This positioning of the Sorcerer introduces an intriguing element of ambiguity into the viewing of the image. The rock surface on which it was drawn, although high, is not the most prominent surface in that portion of the Sanctuary. On the contrary, the outcropping that projects from the left in front of the Sorcerer is the most centrally located surface, one that faces directly and without obstruction into the entire chamber. Had the person who created the Sorcerer wished to make that image more conspicuous and more readily viewed, he or she could have drawn it on that outcropping.[9]

The final, left-side outcropping contains an engraving of a bison, smaller than the Sorcerer and not painted, with what appears to be an arrow pointing into its midsection (see Figures 21 and 32). Since we do not know the relative dates at which the Sorcerer

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[9] Depending how high on that outcropping one wished to draw, this may have required scaffolding. We know that scaffolding had been used at Lascaux probably three thousand years prior to the creation of this image, and therefore it is reasonable to assume that the people of Les Trois Frères could have placed the Sorcerer at various locations on the front outcropping, had they so desired.

was painted and engraved and the bison was engraved (see discussion below), we do not currently know whether the space on the front outcropping was õalready takenö at the time the Sorcerer was created.

The Sorcerer is the highest image in the Sanctuary. There are hundreds of other engraved images in the Sanctuary, but with the one exception of the bison discussed immediately above, all of those other images were placed below approximately 2 meters from the floor, i.e. roughly at eye level or below. The hundreds of other images are a seeming jumble, on top of and around each other, consisting primarily of animal images but with a few possible therianthropes. Breuil (1952: 176) characterized them as being õin incredible numbers and often in a terribly tangled mass.ö They cover much of the lower wall space of the Sanctuary (Bégouën and Breuil 1958, reprinted 1999) See, for example, Figure 33:

Figure 33.
Engravings in the õSanctuaryö
(From Bégouën 1958: 56)

They are very fine and cannot be discerned except upon a close, meticulous inspection, and in that sense the tracings lend to them a distinctness that does not exist in the original, at least today. Even people who have visited the Sanctuary many times struggle to locate some of the images.

The Sorcerer image is approximately four meters above the floor of the chamber. Given the final, left outcropping that partially obscures it and its height above the floor, it is not possible to place oneself directly in front of the image while remaining on the ground. The best one can do is view it gazing upwards and to the left, standing a few feet from the base of the wall on which it was drawn, and the image always remains tantalizingly out of reach and slightly askew from your line of sight. Leroi-Gourhan (Leroi-Gourhan 1965: 124) noted that it was õset in the highest and most inaccessible spotö in the Sanctuary.

The Abbé Breuil (1952) stated that the Sorcerer figure "dominates" the Sanctuary, and in one important sense this is undeniable. Being the only painted figure in the chamber, and being placed so much higher than all of the engravings, the Sorcerer is inescapable and draws in one's eye, seeming to command the space. At the same time, however, its disappearance and reappearance as one moves around the chamber, and the effort it takes to try to get a good look at the image, make it somewhat less than prominent.

The placement of the Sorcerer was certainly intentional. It was not possible to paint this image from the ground or without forethought. To reach the spot where one could create the image requires some bouldering, and one would have to hold oneself in the proper position by pushing outward from the wall beneath the image's location while bracing one's back against the reverse side of the left outcropping. While not the most difficult feat of rock climbing ever attempted – after all the Abbé Breuil climbed up there to make his tracings of the image – this move requires accessing a steep entry at the far back of the chamber and would require a certain level of finesse and care. The non-random nature of the placing of the image is further underscored by the absence of other images at that height in the chamber; this image was separated from all the other images. The overall arrangement of the images in the chamber could not be accidental.

3.   Analysis: Pictorial Metaphors and Blends

(a)   Analysis of Pictorial Metaphors

As noted above (see p. 12), Forceville has attempted to categorize and analyze imagery from the perspective of metaphor theory. He has divided pictorial metaphors into the following categories:

➢ Contextual Metaphors: where an object is metaphorized because of the visual context in which it is placed.

- Forceville's example is a Dutch[10] advertisement for Dove hair-silk, showing an open jar of the product with a spoon in it, the spoon positioned to suggest someone eating the hair-silk (though no hand is depicted). The caption of the advertisement states that "Your hair, too, sometimes deserves a treat." See Figure 34. Forceville sees the metaphor "HAIR-SILK is ICE CREAM" in this picture; in his view Dove wants viewers of the advertisement to draw upon the source domain of ice cream and to map the notion of spoiling oneself from there to hair-silk (Forceville 2008: 464-465).

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[10] Forceville is a Professor at the University of Amsterdam, hence the Dutch examples.

METAPHOR IN PICTURES AND MULTIMODAL REPRESENTATIONS

ook je haar verdient af en toe iets lekkers.

Figure 26.1. Dutch advertisement for Dove hair-silk, with the contextual
pictorial metaphor HAIR SILK IS ICECREAM.

Figure 34.
Advertisement for Dove Silk
(From Forceville 2008: 464-465)

o   Another example could be the American legal industry advertisement
    shown in Figure 35. In this advertisement problems resulting from large
    volumes of electronic data are to be understood as mountains, and the
    difficulty of dealing with them is compared to the difficulty of scaling a
    steep rock face.
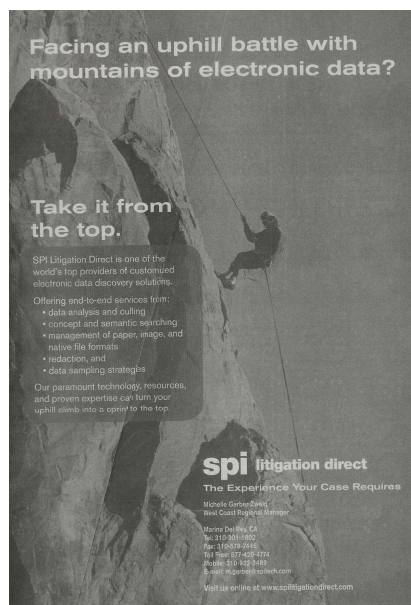
Figure 35.
Legal Advertisement

o Also from the field of law is an advertisement by The Rutter Group, a publisher of legal summaries and guides used by attorneys (see Figure 36). In this ad legal research is to be understood as walking a trail, with multiple ways of moving forward being presented (the ad works because, in fact, legal research does consist of identifying correct lines of cases and selecting the ones that are most analogous and therefore appropriate).

Figure 36.
Legal Advertisement

o Note that in both of the foregoing examples, the metaphor is presented largely through the writing that accompanies the picture, and in fact the metaphor would not be communicated but for the writing. In the Rutter Group ad, for example, without the caption the metaphor would not be recognizable. Obviously, no such writing appears in association with cave art. If this type of metaphor is to be found in prehistoric imagery, something other than writing will need to be utilized to contextualize the image.

o One aspect of õcontextö that could come into play is the spatial positioning of the image, in relation to the viewer and/or in relation to other images. The location of one image above another might suggest, for example, that the former is superior to or dominant over the latter image. By the same token, the positioning of the elements of a single, unified image could indicate metaphorical relationships between them (Arnheim 1969: 268).

➢ Hybrid Metaphors: Two objects that are normally distinct entities are physically merged into a single õgestalt.ö

o Forceville again draws on a Dutch advertisement to illustrate this type of metaphor (see Figure 37). In this advertisement, which has the written caption: õThereøs a reason why our spinach is deep-frozen so fast,ö Forceville identifies the metaphor õCLOGS are RUNNING SHOES.ö The idea is that this company gets its spinach into deep freeze more quickly than its competitors, just as running shoes allow someone to run faster

than clogs. The image of the clogs/running shoe hybrid suggests
quickness not normally found in walking with wooden shoes.

Figure 37.
Dutch Advertisement
(From Forceville 2008: 466)

o   A flyer for a humanities conference, Figure 38, also contains a hybrid
image of a member of õrobo sapiens.ö From the perspective of metaphor
theory, this could be suggesting that humans should be understood as
being in part robotic, õHUMANS are ROBOTS.ö Alternatively, it might
be analyzed through blending theory, as a blend of human and robot, with
certain features of each being projected to the blend.

Figure 38.
Advertisement for Academic Conference

o It is not difficult to find hybridized objects and images from the Upper Paleolithic. As noted often, there is the famous example of the õLöwenmenschö (Figure 9, above), and the similar, smaller lion-human figure from Hohle Fels cave in the Ach Valley in Southern Germany (Figure 39). The õSorcererö of Gabillou cave is another example, as is the Sorcerer of Les Trois Frères and the two smaller composite figures from the Sanctuary. The question is whether these hybrid figures are evidence of metaphorical thinking; it may be that they are more appropriately analyzed from the viewpoint of conceptual blending. See the discussion below.
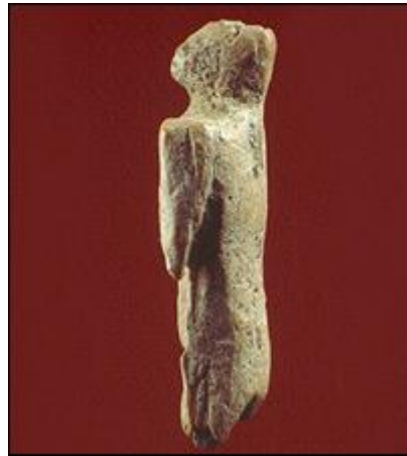
Figure 39.
Small õLöwenmenschö from Hohle Fels Cave
(From Conard 2003)

➢ Pictorial Similes: Two objects are represented in their entirety in such a way that they are made to look similar. The techniques available to cue this similarity are manifold: similarity in form, position, color, lighting, function, and so on.

o Forcevilleøs example is an advertisement for a Nokia mobile phone, showing a matchstick and the mobile phone side by side, with the title õsimply ingeniousö (see Figure 40). The metaphor, according to Forceville, is õMOBILE PHONE is MATCHSTICK,ö and the desired reading by potential customers involves mapping the assumed brilliance and simplicity of the matchstick to this particular mobile phone.

Figure 40.
Nokia Advertisement
(From Forceville 2008: 467)

o An example from an American advertisement can be seen in Figure 41, an ad by Suzuki. There are many blends in this image, but primarily the Suzuki vehicle is placed below a bulldog riding a skateboard, and apparently the unusual and quirky nature of the bulldog on the skateboard is meant to be mapped, in the viewer's mind, to this allegedly exciting, quirky car.

Figure 41.
Suzuki Advertisement

o The above examples, like the examples of contextual metaphors, would be more difficult to recognize as metaphors without the written cues. Perhaps one could find similarities between the matchstick and the cell phone if

their pictures were placed next to each other without any accompanying words, but the comparison the viewer drew may or may not be the one that the advertiser desired. The same is true for the bulldog and the car. In this light consider a painting such as Giorgione's renaissance work *La Tempesta* (Figure 2, above). There are various aspects of the overall painting that could be seen as juxtaposed: the woman and baby versus the young squire; or the bucolic foreground with the threatening sky further away. But it is not clear whether Giorgione wanted the viewer to make any such comparisons and, if so, which metaphor he wished to suggest.

➢ Integrated Metaphors: A phenomenon experienced as a unified object or gestalt is represented in its entirety in such a manner that it resembles another object or gestalt even without contextual cues.

   o Forceville provides the example of a Philips' 'Senseo' coffee machine (see Figure 42). He argues that the machine is designed in such a manner so as to represent a servant, triggering the metaphor 'COFFEE MACHINE is SERVANT.'
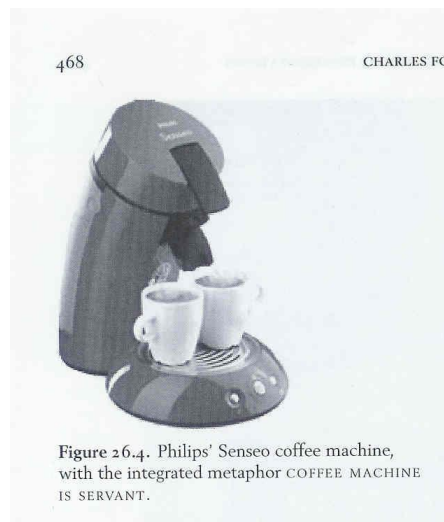
Figure 42.
Advertisement for Philips' 'Senseo' Coffee Machine
(From Forceville 2008: 468)

(b)   Issues Involved in the Application of Metaphor and Blending Theory to the Upper Paleolithic

i. How Do We Know if it is a Metaphor?

The world of Paleolithic art is composed of a wide variety of imagery on a wide variety of media. In order to identify metaphors in this wide corpus of work, we need to have a few ground rules to guide our inquiry. The key question is: how do we know,

when viewing an image or a number of images, whether there is a metaphorical conception contained in that image or those images?

Forceville provides a simple test to guide this inquiry. He states (2008: 464) that for anything to be a metaphor, pictorial or otherwise, the following three questions should be capable of being answered:

(1) What are its two domains?
(2) What is its target domain, and what is its source domain?
(3) Which feature or (structured) cluster of features can or must be mapped from source to target?

Forceville (2010) makes the important point that not every hybrid image contains a metaphor. Although the merging of two different types of things might appear to be an anomaly, which therefore causes us to ask whether it contains a metaphor, as Forceville notes:

> hybrids do not necessarily allow for construal of one thing
> in terms of another; they may be a mere mixture of two
> things. An amphibian car is simultaneously a car and a
> boat, but it is not, arguably, a car as a boat, or a boat as a
> car: it is simply a multifunctional vehicle.

One of the examples of metaphor that finds its way into many analyses is the metaphorical statement õthat surgeon is a butcher.ö The idea here is that although the person in question is a surgeon, his technique is such that he might more accurately be seen as a butcher, one who hacks flesh without anywhere near the dexterity that a surgeon should possess, and certainly not the kind of specialist that you would want to have working on you or someone you care about. In other words, the metaphor seeks to have us map aspects of a butcherøs profession (the source domain) on to surgery (the target domain). It is easy to imagine how this metaphor could be depicted pictorially, perhaps a picture of a person in surgeonøs garb holding a cleaver and a large knife instead of surgical implements. A viewer of that image, particularly one from our culture today, may be able to extract the proper metaphor from that image, but someone from a place without surgeons, with surgeons who dress differently, or from off in the future may not have the necessary cultural understandings or frames of õsurgeonö and/or õbutcherö to be able to interpret the image accurately. A hybrid image may or may not contain a metaphor, and even if it once did, that meaning may be lost as cultural understandings evolve.

ii. Whose Metaphor is It? The Question of Intent

This identification process also raises the issue of intent. Presumably this process is aimed at uncovering the meaning that the *creator* of an image *intended* to convey to the viewer. Suppose the creator of an image had a message in mind, one that involved a metaphorical statement mapping aspects of a source domain to a target domain. She

chose to convey that message by constructing her image in such as way as to suggest the desired metaphorical conception. A goal of the type of inquiry engaged in by this dissertation is to identify and recognize that metaphor and thereby what the underlying message is supposed to be, the purpose being to understand how that image was meaningful to the people who viewed it.

But the situation is not that simple. If we ask õhow was that image meaningful to the Magdalenian people who viewed it?,ö we need to consider not just the intent of the creator, but also what meaning the image was given by the people who viewed it. The understanding of the people viewing a piece of art may or may not be the same as the meaning the creator had in mind. This is particularly true of the imagery of the Paleolithic, given the immense amount of time that may have passed between the creation of an image and its viewing. It may be that, for example, the Sorcerer of Les Trois Frères was created and initially viewed at one time, but then repeatedly viewed over the course of millennia by many groups of people, many of whom did not share the cultural frames and concepts implicitly understood by the people who created it. That is, the original creator had one idea in mind, and perhaps that idea was shared by the members of her clan or group, but as time passed others came to the cave and viewed the image, drawing from it their own meanings and understandings.

This is the inherent weakness of an approach that asks what *the meaning* of an image is. Recall the quote from Randall White with which this dissertation began. Asking about *the meaning* presupposes that an image has a single, fixed meaning for all people at all times, one with which the creator intentionally infused the image, and one that could then be extracted or read at any time thereafter by any person or group of people, regardless of whether their own cultural frames and understandings were congruent with those of the creator and her people.

What we see, by contrast, is that the better approach is to take a group of viewers and ask what meaning *they* might have garnered from an image. Of course the resolution of the archaeological record may not allow us to identify individual groups of people living at very discrete times, such as a specific clan or group that inhabited the Ariège seasonally during a one hundred year period from 14,137 BP to 14,037 BP, before following a change in animal migration habits and moving on toward the Dordogne. But subject to and recognizing that ever-present limitation, we can seek to identify more generally how an image may have been meaningful to a broad category of people living in a geographically identifiable area during a broad time period that is internally consistent from the viewpoint of climate and ecology, such as õthe Magdaleniansö generally. This approach corresponds to the modern practice of archaeology, in which we obtain data pertaining to various groups of people and õculturesö that we identify. For each such group, we might ask how an image ó whether created at that time or long before ó might have been meaningful to them.

We should also recognize that not every image or piece of art contains a message, at least not one that the artist intended to communicate. Sometimes an artist just creates something, not intending to communicate anything in particular. A viewer may extract a message or meaning from that work, notwithstanding the fact that none was put in. For example, in high school ceramics class my daughter created a composite animal figurine that looks to be a combination porcupine/amphibian/human, with a cylindrical body covered with lengthwise striations, a fin running from its head down the center of its

back, smaller fins as arms, and a very human-like mouth seemingly singing or exhorting. See Figure 43:

Figure 43.
Ceramic Composite Creature

To me, this work captures in one figurine the entire process of animal evolution from fish through the first amphibian to crawl up on land through humanity in all its striving. To her, itøs just something she made absent-mindedly while õmessing around.ö We could speculate about what cultural imagery was floating around in her head and that caused her to conceive of this beast, but the fact remains that she did not intentionally seek to transmit a meaning to anyone else.

A trip to an art museum also demonstrates quite quickly that some images have no inherent meaning, nothing that the artist is explicitly seeking to convey. Some works of art are simply intended to shock the viewer, convey an emotion, or to put the rest of the art in a different perspective or context by challenging our conception of õwhat is art.ö For example, at the San Francisco MOMA there is one work that consists simply of a white piece of canvas.

So we need to ask, when evaluating Paleolithic imagery, *whose* metaphor it is that we are identifying? Can we say that a certain metaphorical conception was intentionally õput intoö the work, with the goal of having viewers identify that metaphor and learn from it? Or are we simply identifying a possible metaphor that *we* have?

iii. The Lack of a Relative Chronology

In the case of Ice Age art, and the imagery of Les Trois Frères in particular, the identification of metaphors and blends is complicated by the lack of a relative chronology. There is no timeline showing which images in a certain location were made before which other ones were created. This makes it difficult to state with any certainty that two images are related by some metaphorical conception or were created with a certain blend in mind. If we pick pairs of images that seem related, we might be picking images that were made thousands or just hundreds of years apart.

The Sanctuary of Les Trois Frères is a case in point. In its current state, it contains the Sorcerer image above all the others, the Bison on the outcropping in front of the Sorcerer, and the mass of jumbled images below. In that jumble are two smaller

composite figures, with features of both humans and bison. We might wish to select certain images and hypothesize a relationship between them, but we don't actually know the chronological relationship between those images. For example, were the two small composite figures already there when the Sorcerer was engraved and painted above them? Were they done at approximately the same time, or 50 years later? Would the person who made the Sorcerer have preferred to engrave that image on the outcropping in front of its current location, but found the best part of that outcropping already taken by the Bison? Or did the Sorcerer's creator select its current location even though the other location was still "available"?

Rock art is notoriously difficult to date. Sometimes carbon residues can be preserved under a layer of calcite, and the date of the carbon residue can provide archaeologists with maximum or minimum dates for the art nearby, as is being done at Chauvet. None of this type of work has been done at Les Trois Frères, nor is there any indication that it is possible. Alternatively, sometimes based on contextual analysis archaeologists can make educated guesses that certain images were created essentially simultaneously, or at least by roughly the same groups of people. Clottes (2003) reports that the archaeologists studying some panels at Chauvet have concluded that certain sets of images were done as part of a larger, complete work.   In a limited set of circumstances engraved or painted lines may clearly overlap others, demonstrating which came first (though not the time period between them). In the past, stylistic analyses have been used to differentiate the archaeological cultures to which certain works of art belong, though stylistic analysis of cave art can lead archaeologists into traps of circular reasoning. The bottom line is that at this point in the development of dating techniques, the lack of a relative chronology of the creation of the images in a cave or chamber remains a major obstacle for creating scientifically defensible interpretations of relationships between images.

Despite these problems, the specific arrangement of images in the Sanctuary of Les Trois Frères does seem to indicate a preconceived plan that bears on the intended meaning of the overall corpus of pictures. As noted above, the placement of the Sorcerer image in a location that is difficult to access implies that its location has some significance. The fact that the Sorcerer is both painted and engraved, while all of the other images are merely engraved, speaks of an attempt to set it apart from the others. The engraving of the vast majority of images below human eye level, with only the Bison and the Sorcerer higher, suggests at a minimum some regulation of the placement height of images and perhaps also an overall plan regarding how the chamber should be decorated so as to produce an intended effect on visitors. This arrangement undoubtedly could have arisen through piecemeal efforts over a long period of time, for example with one group of people making the lower jumble of engravings and perhaps the Bison on the outcropping, and a later group seeing those existing images and deciding to add the Sorcerer. But the effect is nonetheless one of an organized script.

Turning from the entire corpus of images to any single image, it may be somewhat safer to assume that an individual, cohesive image was created at one time by a single person. There is no particular reason to assume, for example, that a small engraving of a horse was made by multiple people over a period of time. But the more complex the picture, the more questionable this assumption becomes. Were all of the parts of the Sorcerer engraved at the same time? We might reasonably deduce that most

of the body was created in a single effort, since it holds together thematically, but it is certainly possible that a portion of the image, such as the antlers, was added at a later time. Nor can we currently say whether a significant amount of time elapsed between the painting and the engraving of the image.

(c)   Analysis of the Sorcerer and Related Images: How Might They Have Been Meaningful to the Magdalenian People?

      With the foregoing issues in mind, I will attempt to apply metaphor and blending analyses to the images in the Sanctuary at Les Trois Frères, first the Sorcerer itself and thereafter the Sorcerer in combination with other images and combinations of images. The goal of this exercise is to ascertain whether these approaches might be helpful in understanding how the images were meaningful to the Magdalenian people who created them and viewed them. The key question is whether the application of these theories adds anything to what we would know if we did not use these theories in our inquiry. Do they provide deeper insight into the issue? Do they lead us to novel lines of inquiry, ones that we may not have thought of had we not used metaphor or blending theory? Can we identify questions and issues for future research?

i. What Does the Sorcerer Image Depict?

      The Sorcerer appears to be a combination of many different animals. Of course, nothing from biology or the archaeological record suggests that such a creature ever existed, and so this image either depicts an imaginary composite animal, or a human dressed up in a costume that gave him or her this appearance. Researchers have stated varying opinions on which of these might be correct. Mohen (2002: 183) refers to the Sorcerer as a õstrange, composite figureö and states the following opinion:

> Comparison with findings in other prehistoric art centers
> would lead us to believe that such figures are neither
> sorcerers nor shamans, but imaginary beings with their own
> distinct identity. They are not wearing masks or disguises;
> they are composite, semi-divine creatures.

Count Henri Bégouën (1929) recognized both possibilities:

> It is the supreme mystery of the cave. Can it be some weird
> deity of those primitive people? Perhaps rather it is the
> Arch-Sorcerer who has taken unto himself the divers (sic)
> attributes of the beasts he enchants, a character personified
> even in our own day by the Shaman of the primitive tribes
> of Siberia.

The Abbé Breuil, as noted above, considered it to be õthe Spirit controlling the multiplication of game and hunting expeditionsö (Breuil 1952: 176). Leroi-Gourhan (1965: 367) called it a õhypersymbolicö figure.

ii. Metaphor Analysis of the Sorcerer Image

If the Sorcerer image is a depiction of a composite being, it is a candidate for analysis as a õHybrid Metaphor,ö in that many animals that are normally physically distinct are merged into a õsingle gestalt.ö There are multiple potential metaphors here. For example, perhaps we are to understand and experience humans as bison, humans as reindeer, or humans as some combination of a number of different animals.

The fact that the Sorcerer contains elements of a number of animals presents an immediate problem for an approach based on metaphor theory: which aspects of the image should we select for metaphor analysis? With multiple animals involved in a single image, selecting two out of the mix as candidates for a metaphor analysis becomes problematic. Metaphor theory is designed to analyze mappings from one domain to another (Grady, et al. 1999). Where there are multiple domains involved, it is not clear how the theory is to be applied, as it does not appear possible to identify source and target domains. If the artistøs idea was to communicate the notion that humans should be understood as bison, then what are we to make of the other animals that have lent elements to this composition? This is a weakness of metaphor theory for the interpretation of therianthropic images from Ice Age art.

Contrast the case of an image or figurine that is a combination of only two animals, where it is easier to identify potential metaphors. For example, in the case of the Löwenmensch there is a human body and a lionøs head. There appear to be two possibilities. First, we might suggest that the idea is to depict the metaphor HUMANS are LIONS. Second, perhaps the artist sought to suggest the converse, that LIONS are HUMANS. Since there are only two animals involved, a theory regarding the mapping of one domain to another at least fits the evidence. But which was the *source* domain and which was the *target* domain? Was the idea that humans or human nature should be understood as having lion characteristics, or that lions should be understood as human in some way?

More vexing is the question of how we can determine whether in fact the artist was attempting to communicate either of the possible metaphors. Unlike modern õmulti-modal metaphorsö that have both a picture and clarifying text (Forceville 2008), here we have only the image itself and what we know generally about Ice Age peoples. Lost to us are the specific cultural understandings and explanations that would have shed light on the meaning of an image for those who viewed it thousands of years ago. It may be that this image is a hybrid but is *not* intended to be metaphorical, as in Forcevilleøs example of the amphibious car.

The fact that the figure has a human body and a lion head is quite likely significant. Suppose the opposite were the case, that the figure had a lionøs body and a human head. This may well have a different meaning, with the difference turning on oneøs conception of the role of the body in human life versus the role of the head. In the 21st century, no doubt largely due to the lingering, perhaps pervasive, influence of Cartesian mind-body dualism, we tend to see the head as the repository of thoughts, personality and feelings, as the part of the body that guides what the rest of the body does. From that perspective, placing a lionøs head on a human body would tend to indicate that humans think like lions, that a personøs personality and emotions and

therefore actions will reflect "lion-ness" to some degree. From our modern perspective, where an understanding of cognition as being embodied has not yet become the norm, if the figure consisted of a human head and a lion's body we might assume that this being thought like a human but had the physical capabilities of a lion, truly a powerful combination.

Ice Age peoples may not have had this understanding at all. In a pre-Cartesian, pre-Aristotelian world, did they think of thoughts as originating in the head, somewhere else in the body, outside of the body, or nowhere at all? What did they see as the role of the head in human actions? The simple daily activities of seeing, hearing and eating, which all involve the head regardless of how one understands thinking, no doubt gave the head a position of some primacy in human affairs, but whether this extended beyond a recognition of the functional aspects of the head is unknown.

Based on the Löwenmensch figure alone, it is not possible to determine which of two metaphors, human as lion or lion as animal, may have been intended. However, the foregoing discussion suggests that one fruitful line of research may be to investigate the role that human heads and animal heads played in the depictions from the Ice Age peoples. For example, we might consider what other images have human bodies with animal heads (e.g. the Petit Sorcerer in Les Trois Frères, the figure at the Shaft in Lascaux, the Sorcerer of Gabillou), and we might consider the lack of a head in some depictions (e.g. the female figurine from Hohle Fels, Figure 26), or the varying amounts of detail in the depiction of a head (e.g. the Gravettian Female Statuette from Dolní Věstonice, Figure 44, or the Brassempouy figurine, Figure 45):
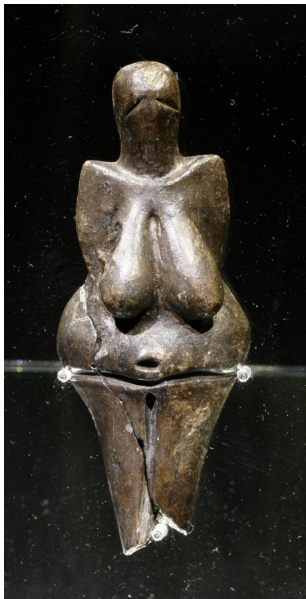
Figure 44.
"Venus" from Dolní Věstonice
(From mathildasanthropologyblog.
wordpress.com/)

Figure 45.
Brassempouy Figurine
(From White 2003: 86)

Returning to the Sorcerer image, if it were intended to depict a composite being, it is difficult to untangle the multiple representations and isolate any given pair of features that should be seen as being target and source domains. It is still possible that the õanimal worldö more generally (as opposed to a specific animal) might be a source or target domain, with humankind being the other. An analysis similar to that described in the Löwenmensch context might be possible, with the different portions of the body being studied for their apparent significance in other images, and perhaps in burials, the goal being to identify how a metaphor might have worked for these people. A key problem is that such an analysis, due to the sparseness of the archaeological record, would of necessity draw upon images from a wide geographical area and across thousands of years of prehistory.

On the other hand, if the Sorcerer image is actually the depiction of a person dressed in an animal costume, we can look for potential metaphors in the underlying intent of the act of dressing as an animal. Suppose the image depicts a shaman engaged in some sort of ritual involving communication with the animal world or the assumption of animal characteristics. Unfortunately, here too it is difficult to identify source and target domains and what is intended to be mapped from one to the other.

I have argued above that primary metaphors, those metaphors that are based on common physical associations and human bodily experience with the world, are more likely than others to have been understood and used by the people of the Ice Age. Having bodies that were the same as ours today, in so many ways they apprehended the world in a manner identical to how we encounter it today.

There are a number of primary metaphors based on the concept of Up vs. Down. Lakoff and Johnsonøs list (1999: 50), quoted above at page 21, contains the following primary metaphor that might be applicable to an analysis of the Sorcerer image itself:

HAPPY is UP.

> Examples: õIøm feeling *up* today.ö õI was really *down* for a while after he left.ö
> Primary experience on which it is based: Feeling happy and energetic and having an upright posture (correlation between affective state and posture).

Interestingly, to the extent that this metaphor is based on physical posture, if it is in play in the Sorcerer it would suggest that the corollary of õHappy is Upö ó õNot Happy is Not Upö ó may be part of the message here. The Sorcerer is depicted in a posture that is far from erect; in actuality the figure is oriented diagonally, and even if it were rotated to a more vertical orientation its bent posture would prevent one from considering it erect. It is thus ambiguous with regard to that metaphor. By contrast the so-called Petit Sorcerer lower on the walls of the Sanctuary, the image said to contain a musical instrument, is depicted in far more erect a posture than is the Sorcerer.[11]

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[11] There is some speculation that the Petit Sorcerer was intended to be understood as horizontal; however Clottes provides a convincing refutation of that notion (http://www.ucl.ac.uk/prehistoric/past/past31.html#Recent).

This line of inquiry suggests that an analysis of the posture of human or composite figures throughout Ice Age imagery may be fruitful.

iii. Metaphor Analysis of the Sorcerer Image in Relation to Other Images in the Sanctuary

The discussion above was limited, somewhat artificially, by the consideration of the Sorcerer image alone, without reference to its context or the other images and artifacts that are nearby. But of course no image exists in isolation. The Sorcerer exists in relation to hundreds of other images in the Sanctuary, and hundreds more in the rest of the cave. Some of those images may relate to the Sorcerer, and some of them may be amenable to metaphor analysis on their own.

The aspect of the relationship between the Sorcerer and the other images in the Sanctuary that strikes observers first is the relative positions of the images. The Sorcerer is the highest image in the chamber, enjoying a õdominantö position compared to the others. This positioning raises the possibility that metaphors based on Up vs. Down may be in play. There are other Up/Down primary metaphors (Lakoff and Johnson 1999) that are useful to consider in the context of the positioning of the Sorcerer image:

MORE is UP.

> Examples: õPrices are *high*.ö õMy inventory of DVDs is *low* right now.ö
> Primary experience: Observing rise and fall of levels of piles and fluids as
>   more is added or subtracted.

CONTROL is UP.

> Examples: õIøm on *top* of the situation.ö õMy schedule is about to take
>   me *under*.ö
> Primary experience: Finding that it is easier to control another person or
>   exert force on an object from above, where you have gravity
>   working with you.

Of these two, it does not appear that the former is particularly relevant here, in that the notion of *quantity* is not involved. The latter, however, is provocative. Breuil described the Sorcerer as õdominatingö the Sanctuary. Breuil did not say why itøs dominant, but his description suggests that he believes it is dominant because of its height: õelle domine de près de 4 mètres.ö Viewing that statement and the image from the perspective of primary metaphors provides us with the cognitive basis for his statement. The Sorcerer seems dominant because it is the highest image in the chamber.

Moreover, its õdominanceö may relate to its centrality in the far end of the Sanctuary, reflecting the metaphor ESSENTIAL is CENTRAL. Sweetser (2004) argues persuasively that the underlying human experience of our bodies as containers, positioned in an erect stature, with important elements being high and toward the center of the body, causes us to engage the world with the understanding that basic and essential aspects of

that world are similarly those that are positioned high and centrally. She asserts that "both centre/periphery and verticality are mapped onto CONTROL: CONTROL IS CENTRALITY and CONTROL IS UP." Thus one's apprehension of the positioning of the Sorcerer in the Sanctuary fits into other metaphors that are basic to our engagement with the world.[12] In this sense modern cognitive science has provided an *explanation* for a phenomenon that was easily noticed without knowledge of how it worked.[13]

The issue of height/elevation within the Sanctuary is more complex than the foregoing analysis indicates, however. Although the Sorcerer image is located in a high position within the Sanctuary, the Sanctuary itself is the *lowest* part of the cave of Les Trois Frères. It sits well below the other important sites within the cave, e.g. the "Chapel of the Lioness" and the "Gallery of the Owls." Its deep location is accentuated by the process of getting into the chamber, in that one slides down a steep "Cascade" to reach the floor of the Sanctuary.

All of the evidence in the cave suggests that the Sanctuary is significant, yet considering it to be significant in light of its overall location requires us to reverse our standard conception that "important things are found up high." The depth of the chamber, its remoteness from the outdoors, also seems to be at play here. This is not entirely surprising, given that many apparently significant images are found in extremely remote spots and/or near locations from which the cave seems to disappear into the depths. Examples are the scene at the Shaft in Lascaux, the clay modeling at the edge of seemingly bottomless fissures at Bédeilhac, and the clay bison of Le Tuc d'Audoubert. Clearly more is going on here than simply to say that height correlates with importance.

Aside from being the highest image in the Sanctuary, the Sorcerer is also one of the largest. It is 75 cm high and 50 cm wide (Breuil 1952: 176). There are other figures in the Sanctuary that are in that same general size range: the bison on the rock in front of the Sorcerer is 70 cm from its muzzle to the root of its tail (Bégouën and Breuil 1958, reprinted 1999), and the two spotted bears are 57 cm and 60 cm long, respectively. However, each of the other two composite figures is approximately 30 cm high and much narrower (Bégouën and Breuil 1958, reprinted 1999). From the point of view of the primary metaphor "IMPORTANT is BIG," the Sorcerer clearly qualifies, but if we pursue that theory then we would also have to ask about the importance of some of the other figures in the chamber.

The Sorcerer is unique in another way as well. It is the only image in the Sanctuary that is both painted and engraved, all the others being merely engraved. Although we can imagine metaphors that might provide a basis for some analysis based on complexity, this does not fit within any of the primary metaphors on the Lakoff and Johnson list.

iv. Metaphor Analysis of other Images in the Sanctuary

Aside from the Sorcerer, there are other engraved images in the Sanctuary that raise some of the same questions. Most striking of these are the two other composite

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[12] We might also consider the notion that the cave of Trois Frères can be understood as a container, with the high and central features being considered important from that perspective.
[13] Below I argue that from another perspective, the Sorcerer is not necessarily as dominant as one might first think. Dominance involves not just height, but prominence of location.

beings, both with human-like legs and male sexual organs but with the shoulders and heads of bison. The first is the so-called Petit Sorcerer, mentioned above, which is depicted in an apparent relationship with two reindeer cows (see Figure 46; note that in the original these engravings are not separate and distinct from the surrounding õjumbleö of engravings):
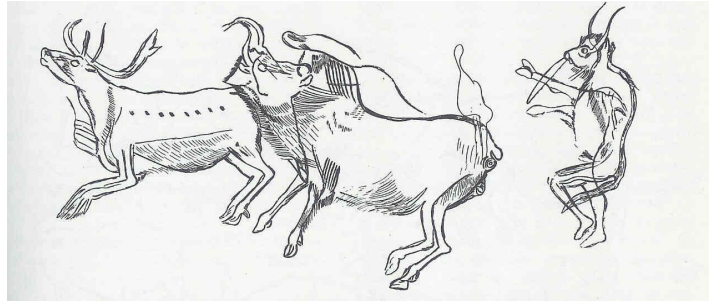
Figure 46.
Petit Sorcier, Les Trois Frères
(From Bégouën 1958: 59)

Breuil (1952: 176) describes the scene:

> The furthest away is a Reindeer cow, normal except for its front legs which have been changed into the legs of a web-footed creature; the second, rather nearer, has more definite mixed characteristics: the body and legs are those of a Reindeer cow, the anus and genital orifice are given with more than usual detail; on these a small armless feminine human figure is standing upright, but, on the left of a line running from the withers to the chest, the hump, neck, beard and head of a Bison looking backwards is joined on to the hind-quarters, and this strange figure gazes at the semi-human person at the right of this scene.

He describes the human/bison figure as follows:

> His head is that of a Bison topping a body standing upright; that animaløs coat runs all along the back; he has convex shoulders and a waist, the coat ends in a long thick tail lying flat along the left thigh which is raised. This thigh ends in a bent knee and a leg raised as if to mark time. The other leg, also correctly drawn, is straight and supports the body, the stomach and male sex are faintly visible. The two arms are stretched forward and end in hoofs; one, cloven, supports a spindle-shaped asymmetric object, the other end of which is in the creatureøs mouth. When I deciphered it, I thought this was a flute but its asymmetrical shape seems to me to resemble more a little musical bow.

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The second of the two bison-human composites, like most of the engraved images in the Sanctuary, is found in the midst of multiple superimposed images. It is not, however, in any obvious relationship with any of the adjacent figures. Breuil (1952: 177) states only that õthe legs and sex are human and the rest, a little Bison turning round its head to the left.ö

These two figures present the same interpretive issues as the Löwenmensch, in that they appear to combine human features with one other animal, in this case bison. Here too it is difficult to discern whether the artist sought to have humans understood as bison, bison understood as humans, or neither of the above.

It may also be that, despite the focus that researchers have traditionally trained on the Sorcerer, these other figures could be more central to the dominant theme of the Sanctuary. Bison are the animal most commonly depicted in that chamber (Vialou 1986), and these two smaller figures incorporate elements of that animal. Moreover, it is a bison image that was engraved on the most prominent point in the chamber, namely, the outcropping of limestone that juts out in front of the Sorcerer. This suggests that an analysis focusing on bison may be fruitful in õdecodingö the imagery of the Sanctuary.

v. Blending Analysis of the Sorcerer Image

Blending theory may be better suited to the analysis of composite images such as the Sorcerer, because blending theory is not limited to the analysis of the relationship between two domains. A blended space can have multiple input spaces, any of which in turn could be a blend of other input spaces (Fauconnier and Turner 2002). Although the basic blending diagram (see Figure 3, above) contains two input spaces, the theory is by no means restricted to that simple analysis. The researcher is not bound to find a mapping between two domains, one of which is being understood through the other.

Clearly the Sorcerer image is the representation of a conceptual blend that existed in the mind of the image-maker. Each of the elements of the image existed in the mind of the artist (and the viewers) as a *mental space*, and they were integrated in her mind to create the composite being. This is true regardless of whether the artist was rendering an image of a being that already existed in her cultureøs cosmology or whether she created it õon the fly.ö In her mind there would have been a mental space for humans, another for reindeer, one for bison, one for owl, and so forth, each of which was an input to the entire ensemble, an integration into one imaginary Being that had elements of each of these animals.

Taking the analysis further, the artist and the viewers of the Sorcerer image would have had mental frames, used to structure this blend. Recall that frames in blending theory are understandings existing at the time a blend is created or accessed, which structure that blend and give it context (Fauconnier and Turner 2002). Just as today we have a frame for warfare and a frame for debate, which together allow us to understand the statement õat the debate she slaughtered her opponentøs argument,ö so too in those times the Magdalenians had frames that allowed them to understand blends relevant to their lives. In some cases the frame from a single input space is used to structure the blend; in other cases (double-scope conceptual blends) aspects of two or more frames are imported into the blend.

The Magdalenian people would have had many frames based on the nature of their material existence. We know that they lived by gathering and hunting, they were a highly mobile people, they created images in caves, they sometimes lived in caves but also utilized temporary shelters, and they worked with tools made of flint.   Many of the frames they utilized to understand the world around them would have arisen from such daily activities and encounters, for example:

- Gathering plant foods and medicinal plants
- Trapping or hunting small game
- Hunting large game
- Processing animal products, e.g. hides, bones, antlers
- Creating music
- Creating imagery (drawings, figurines and sculptures)
- Traveling from one location to another
- Encountering physical obstacles to movement
- Constructing shelters
- Experiencing weather in a direct, visceral sense that is largely lost to those of us today who spend much of our time indoors
- Experiencing the change of seasons, also in a direct manner
- Living in the physical world in close contact with natural objects, e.g. constantly coming into contact with rock, dirt, water and snow
- Living in small groups of people, while rarely seeing larger groups
- Interacting with people
- Interacting with animals, some of which are dangerous
- Carrying water

Certainly the Magdalenian people had a frame for each of the animals they encountered, including those depicted as part of the Sorcerer. They came into contact with all of those animals. Living closer to nature than most of us can imagine, we can be sure that they knew the habits of each animal, how it moved in the landscape, what times of year it would most likely appear, whether it moved as a solitary animal or in a herd, whether it was nocturnal, what danger it may have posed to humans, whether its meat was good to eat, and so forth. All of that information would have been in the frame they had for each animal.

But their frames for each animal would likely have included more than practical, utilitarian information. Today, we can study the material existence of a fox, what it eats and how it travels, but our concept of a õfoxö is broader than that. When we say that a certain politician is a õfoxö we are referring to a sense of cunning and craftiness that we attribute to foxes, not to the physical characteristics or common prey of a fox. Clearly the Magdalenians also thought of the animals around them as more than moving resources, or we would not have so many depictions of them in cave art. Animals were, in Levi-Straussø words, õgood to think.ö Their frame of õbison,ö for example, may have included other understandings and teachings resulting from their beliefs regarding how bison fit into their overall world view.

Among the people we generically refer to as the õMagdalenians,ö there were of course many disparate bands and clans, and it is reasonable to assume that the frames each group had would have varied somewhat from the frames of other groups. Each group may have developed its own particular cultural understandings and beliefs based on its own history and experience. A particular sub-group of the Magdalenian people, for example, may have had certain beliefs about bison, perhaps stemming from its own experiences with bison on particular occasions: a hunt that went poorly, a particularly magnificent bison who eluded capture, the discovery of a bison kill site left by the Neanderthals. Unfortunately, the archaeological record does not provide us with sufficient resolution to discern the beliefs of individual groups, and we are left to speak of the Magdalenians as a single cultural group.

The basic blending diagram provides the basis for the construction of a methodology that could be useful in applying blending theory to the interpretation of Ice Age imagery. The blending diagram breaks down the elements of a blend into its component parts. We can then isolate each of the component parts and study them individually, comparing them to the evidence available from the archaeological record and from suitable ethnographic analogies. In this manner we can more precisely evaluate hypotheses about how a particular blended image may have been meaningful to the people who created it and viewed it, and we can identify issues that require further research.

The methodology might work in a manner such as this:

1. Select an image for analysis.
2. Confirm that the image can be interpreted as a conceptual blend.
3. Identify with as much specificity as possible the people who created the image, including the date of the image if known, e.g. Middle Magdalenian.
4. Articulate a hypothesis about how that image may have been meaningful to those people.
5. Break down the hypothesis in accordance with the conceptual blending diagram, identifying the input spaces, frames, image schemas, and vital relations involved in the hypothesized blend.
6. Analyze each of these elements individually, comparing them to the archaeological record and the ethnographic sources, where applicable, to determine the extent to which there is support for their existence.
7. Consider how the blend õworks,ö for example:
   a. Does it draw on compression of elements?
   b. Does it reduce an idea to õhuman scaleö?
   c. Is there an elaboration running in the blend?
   d. What emotions does the blend invoke, and how might those affect the way the blend is understood?
   e. Is a material anchor involved?
8. Where a hypothesized blend requires the existence of elements that are contradicted by the archaeological record, it will have to be reformulated or discarded.
9. Where the archaeological record and suitable ethnographic analogies are not sufficiently detailed to require the rejection of a theory (which no doubt will often

be the case), utilize the foregoing analysis to identify those elements that should be the focus of further inquiry.

For example, we might select the Löwenmensch for the following simplified analysis, and run through those steps as follows:

1. Select the Löwenmensch for analysis.
2. This figurine is clearly the material manifestation of a conceptual blend that existed in the mind of the person who created it.
3. This figure is dated to 32,000 BP, possibly earlier depending on the resolution of C14 calibration issues, and is attributed to the Aurignacian people.
4. One hypothesis about the figurine would be the following: The people living in the Lone Valley 32,000 years ago imagined and revered a mythical Being that was part lion and part human.
5. The blending diagram:
   a. The schematic diagram for this blend might look like this:
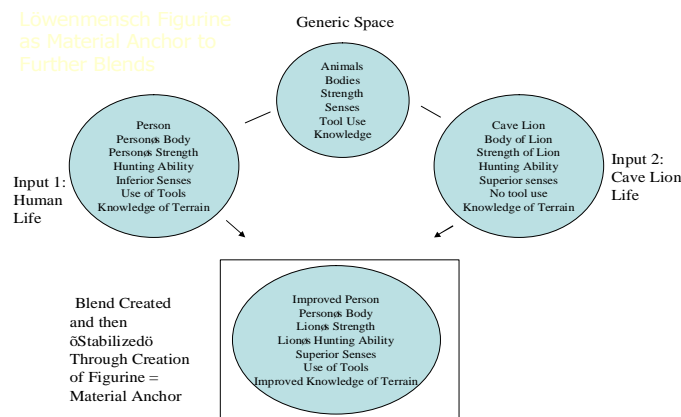
Figure 47.
Schematic of õLöwenmenschö Blend

We might also suppose that each of the input spaces, and therefore the blend as well, were affected by various primary emotions, per Deacon (2006). For example, the input for the cave lion would no doubt have been influenced by emotions such as fear and respect.

6. Analyzing each element individually:

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a. Input 1:

    i. Human bodies: Most archaeologists assume that anatomically modern humans lived in the upper Danube valley during this time period (see, e.g., Conard and Bolus 2001), though the lack of human skeletal material prior to 35,000 BP leaves open various counterarguments.

    ii. Hunting: the faunal material and lithics found in the archaeological record demonstrate that the people of that time engaged in hunting (see, e.g., Niven 2006).

    iii. Senses: if the people of that time were anatomically modern, they had senses potentially equivalent to those of people alive today.

    iv. Tools: Upper Paleolithic sites are replete with tools; those found in time periods corresponding to the Löwenmensch are assigned to the õAurignacianö tool culture.

    v. Knowledge of Terrain: from their hunting and gathering lifestyle and indications of mobility it is logical to infer that these people had an intimate knowledge of the terrain in areas in which they lived.

b. Input 2:

    i. Cave Lion bodies: skeletal material of cave lions exists from this period. These animals were larger than the lions of today and presumably stronger. It is logical to assume that they could move quickly through the Ice Age landscape.

    ii. Hunting ability: These animals were carnivores who lived by hunting and therefore had exceptional hunting skills.

    iii. Senses: also heightened, as with lions of today.

    iv. No tool use: There is no evidence that lions of today or lions of the Ice Age had the ability to manufacture or use tools.

    v. Knowledge of terrain: presumably lions also had a good sense of the terrain in which they lived, though perhaps without the õcognitive mapsö (Renfrew 1994) that humans create.

7. How the blend works:

a. Compression: some types of compression appear to be in play:

    i. Inner Space Relations: Within each of the two input spaces there are compressions of all humans into one, composite, representative human, and all cave lions into one, composite, representative cave lion. This compression allows easier understanding of the blend because the person creating the blend does not need to hold all possible humans and all possible lions in his mind at the same

time; instead, a composite human and a composite lion take the place of all the others. This process of compression facilitates the identification and distillation of those traits that are typically õhumanö and typically õlion,ö which is important to the blended creation of a Being with typically human and typically lion features.

    ii. Outer Space Relations:
        1. I would argue that the general outer space relation of õChangeö between the two input spaces, i.e. the notion that each will undergo change in the blending process, is then compressed into a unique being in the blend (compare Fauconnier and Turner 2002: 93).
        2. We might also ask whether the vital relations of õAnalogyö or õDisanalogyö are involved in the relationship between the two input spaces. That is, how did the Aurignacian people conceive of the relationship between humans and lions? On the most simplistic level, we can say that surely they understood the difference between the two types of creatures ó they would have understood that cave lions were extremely dangerous, powerful animals with certain hunting characteristics, ranges, favored game (perhaps including humans), all of which differentiated cave lions from humans. But there may have been more complex aspects of their understanding of this relationship. It may have been, for example, that within the ontology of the Aurignacian people a certain spirit could take various animal forms, and change from one to the other under certain conditions. From this point of view, humans and cave lions were *related* in that they might be different forms of the same being; the cave lion that ravaged the clan living at Hohle Fels cave might be the same being as the shaman who wandered off from Vogelherd cave two years earlier and had not been seen since, at least not in human form.

b. Human Scale: One of the effects of blending, and the reason people engage in it, is to simplify or reduce concepts to human scale, i.e. to the scale of time, space, causality, etc. that is more readily comprehensible to people given the lives they live day to day. To some extent, this is going on here. The compression of all lions and humans into one of each certainly facilitates understanding.

c. Elaboration: It is not clear, from the figurine and the archaeological record surrounding it, what elaboration may have been underway in the case of this human-lion composite. However, it does seem likely that some sort of elaboration would have been performed, that the purpose of

creating this Being would be to have it play some role in stories, rituals, and the cosmology of the people of Hohlenstein-Stadel.

    d. Emotions: It would be hard to separate the notion of õcave lionö from the emotions such an animal must have provoked. One of the more feared hunters of prehistory, this type of carnivore would have been on the minds of the Aurignacians with regularity, such as when out in small groups, when returning late to the camp site in the evening, perhaps hearing its roar through a cold, winter night.

    e. Material anchor: the conceptual blend of the Löwenmensch existed in the minds of the people familiar with it. Reducing this blend to the now-famous figurine was the creation of a material anchor for the blend, and no doubt facilitated its use in story-telling and ritual.

8. Fit of Hypothesized Blend to Archaeological Record: this sample blend fits fairly well with the archaeological record and analogous ethnographic material, undoubtedly because it is fairly general. Not surprisingly, the more specific we make the hypothesis, the less likely we are to find archaeological evidence to support the hypothesis.

9. Further investigation: even this simplistic blending analysis does highlight some avenues for further investigation. First, to deepen our analysis or to evaluate more specific hypotheses, it will be necessary to understand fully the archaeological evidence pertaining to cave lions during this time period in this geographic area, for example:

> Are there cave lion kill sites?
> Any evidence of cave lions killing humans? (No human skeletal material has been found).

Second, what depictions of lions exist from this time and era? One such is the figurine from Geissenklösterle, dated to approximately 32,000 B.P. Are lions and humans depicted individually, and how are the depicted? Third, is there any evidence of the interrelation of humans and lions, or humans and any other animals?

Such groupings suggest a more stable understanding of this integration of humans and lions, yet one apparently still limited to a relatively small geographic area.

In order to apply blending theory to the Sorcerer, it would be helpful to know as much as possible about the frames the Magdalenians had for each of the animals depicted as part of the image. We would need to know what was contained in their frame for the stag, the owl, the reindeer, the large cat, and so forth. The archaeological evidence for each of these frames would consist of the following types of information:

> Skeletal remains of the animal dated to this time period.
> Evidence that people hunted that animal.
> Evidence that people ate that animal, whether or not they hunted it.
> Depictions of that animal in portable or parietal art.

<u>(d) Evaluation of the Analysis Thus Far</u>

The foregoing sections have shown, I believe, that there are serious problems inherent in attempts to apply metaphor or blending analysis directly to the imagery of the European Ice Age. Although it is reasonable to conclude that the people of that time period were performing conceptual blending and were understanding the world through conceptual metaphors, taking the analysis further is difficult. Identifying specific metaphors is problematic without other, independent evidence to provide an explanation of the juxtaposition of elements we suspect are metaphorical. With regard to blending theory, there may be some value in breaking down an image or figurine into its component parts and then analyzing those parts separately, but the process works best on a level of generality that is not entirely satisfying and may not provide us with new insights into the meaning of the image or figurine. I utilize this same approach again below, with arguably better results, in an attempt at a blending analysis of the interaction of modern humans and Neandertals as shown in the archaeological record of the Châtelperronian.

But before going to the Châtelperronian, in the sections that immediately follow I continue my analysis of the images at Les Trois Frères but adopt a different approach, one based on the embodied mind, images schemas, and primary metaphors. Rather than analyzing specific images, I focus instead on aspects of the physical layout of the cave of Les Trois Frères, both in terms of the positioning of the Sorcerer image and the bodily process required to place oneself before it and engage with it, given the topography of the cave. This approach relies on aspects of cognition that are common to both the Magdalenians and to people today, and therefore has a firmer foundation of universality that provides us, in my view, with more defensible conclusions regarding elements of the meaning of the Sorcerer.

### 4.	*Analysis: The Cognitive Science of Space and Physical Engagement With the Imagery and the Cave*

(a)	<u>Choreographing Bodily Movement</u>

Entering a cave is a full-body experience. All of your senses come into play. There is the quiet that envelops you, broken perhaps by the soft dripping of water and the shuffling of feet. There may be unusual musty, mineral smells. And there is the utter darkness, interrupted only fleetingly by the beams of a few flashlights.

But more than any other sensation, in caves you feel the delineation and structuring of space. Whether it is the expanse of a large cave chamber, such as the Salon Noir in the cave of Niaux (Ariège), or the confinement of a long, narrow passage such as that in Les Combarelles (Dordogne), it is clear that space is limited and defined, and that your movements within that space are subject to the shape and slope of the walls, the obstacles on the floor, the undulating ceiling, the random bend of the passageways.

The physical dimensions and structure of the cave condition how you move through it, and therefore how you experience it. As you negotiate the slopes, turns, and passageways, your body is placed in a sequence of positions, and your attention is

directed toward pre-defined locations. Michel Lorblanchet has described this as a õdialogueö with the caveö (White 2003: 57), but we might also say that the cave õchoreographsö your movements. This interaction with the limited space of a cave would be all the more remarkable to a people whose daily lives are defined by open territory and mobility (Vialou, D., cited in Conkey 1987: 420).

Spaces created by people can have a similar effect. Architecture is concerned with space and how it is experienced, and people have been experimenting with the structuring of space for a long time. For example, Julian Thomas (1993) has provided a remarkable analysis of the creation of space inside of megalithic monuments in Britain. Thomas studied how those monuments were constructed to condition the experience of moving through them, all toward a desired perceptual end. With regard to the Boyne Tombs, Thomas writes:

> At each stage in the process of moving towards the chamber space, architectural devices intervene in such a way as to constrain the way in which the space of the tomb is encountered. Thus the exceedingly long (and narrow) passages define the direction from which the chamber will be entered, at the same time influencing the posture and attitude of the human body during the encounter.
>
> . . . .
>
> Essentially the progression from the outer world to the inner space of the chamber would have been a choreographed reading of a spatial text, in which the investment in spatial control served to regulate the process of interpretation. By holding the body spatially, in certain attitudes in relation to spaces and symbols, a certain dominant interpretation of the tomb space could be reproduced, given the application of a habituated way of reading on the part of the subject.

A similar argument could be made with regard to Les Trois Frères (Ariège). Although there is no indication that the Magdalenian people modified the overall space or dimensions of the cave, I argue below that they utilized its unique configuration to full effect in the placement of the Sorcerer.

(b)   The Bodily Basis of Meaning and the Approach to the Sanctuary: Comprehension is a Journey

In Les Trois Frères (Ariège) oneøs movements are limited and guided by the physical space of the cave. Perhaps the people who created the Sorcerer placed it in that precise location in order to force the viewers of the image to engage in a series of physical movements ó an underground journey ó which would serve to accentuate the high degree of effort involved in coming to know and understand the significance of that

image. The complicated progression of physical acts involved in seeing the image would have been blended in the minds of the viewers with the notion of education or comprehension, with the result that the process of apprehending the Sorcerer was understood as being similar to an arduous physical journey.

The Sorcerer is hundreds of meters from the entrance to the cave. To reach the descent into the Sanctuary through the connected cave of Enlène (as was likely the case in Magdalenian times), one had to go deep within Enlène, crawl through a 60 meter tunnel, traverse a chamber of stalagmites, crawl through narrow openings, and step over and around obstacles. At that point there was the steep drop down the Cascade into the Sanctuary itself. Crossing the Sanctuary is not difficult, but it does involve stepping over ridges of sediment on a slight down slope. To see the complete image, one would have had to position him or herself at the proper spot in the chamber; because from other locations the image is only partially visible or cannot be seen at all.

This underground journey would have been more difficult during the Magdalenian than it is today. At that time, those movements had to be performed while holding an oil lamp precariously upright, being careful not to spill the burning animal fat and thus losing the only source of light, or perhaps holding a torch and taking care not to let it go out. In addition, an oil lamp casts light only upward, which means that the ground would remain in darkness, and it would have been difficult to see where to place one's feet on the uneven, rocky, often slippery surface. No doubt these difficulties added to the complexity of the journey and the desired effect.

There are a number of metaphorical blends that could come into play in the process of apprehending the Sorcerer. Today we are familiar with the metaphors *purposes* are *destinations*, and *life* is a *journey*. We say that "he'll ultimately be successful, but he isn't *there* yet", conceiving of the purpose or goal of being successful as a physical destination (Lakoff and Johnson 1999: 52). And we commonly conceive of life in the terms of travel, saying that "she takes a different road," "he has reached a dead end in life," or (with apologies to the Talking Heads) "we're on the road to nowhere." These conceptions are based on everyday physical actions, and therefore probably were shared by the people of the Magdalenian.

My claim is that the people who drew the Sorcerer wished to underscore the effort required in comprehending its significance. They emphasized that effort by drawing it deep within the cave in a location that required considerable energy to reach, and in a position that required a specific positioning of one's body within the Sanctuary. The physical effort required to reach the image echoed, or more precisely *was blended with*, the effort required to understand it. In that manner they utilized the notion that that process of comprehending the significance of the image was a protracted and difficult one, a process not unlike engaging in a journey. Recall that these were a people very familiar with arduous journeys, given their constant movement through a hilly and often unforgiving landscape.

(c)   The Construction of Meaning Through the Disruption of Paleolithic Rhythms

i. "Rhythms" in the Work of Leroi-Gourhan

While the process of bringing oneself into the presence of the Sorcerer involved physical effort, more was taking place than simply the acts of crawling, bending, and stepping over obstacles. The physical process of getting to the image also involved a disruption of the routine *rhythms* of life in Paleolithic Europe, and that disruption of rhythms played a role in the construction of the image's meaning. The physical process produced cognitive effects.

õRhythmsö is a fairly nebulous term, and its application to life in Ice Age Europe is not readily apparent. To understand the role rhythms may have played in the construction of meaning, it is first necessary to define that term with a brief review of how it has been used in Ice Age archaeology, as well as in sociology more generally.

The concept of rhythms was an important one in the views of French archaeologist André Leroi-Gourhan. He wrote (Leroi-Gourhan 1964: 309) that:

> Rhythms are the creators of space and time, at least for the
> individual. Space and time do not enter lived experience
> until they are materialized within a rhythmic frame.

Here Leroi-Gourhan was not describing õspaceö and õtimeö in their abstract, quantitative senses, as items that stand apart from, and exist independent of, human activity. He did not have in mind time and space as discussed by cosmologists. By using the phrase õat least for the individual,ö he is referring to time and space *as experienced by humans* in their daily activities, such as walking along a path or performing work at home. His contention is that rhythms create the framework within which time and space are understood by people; they give meaning to what would otherwise be abstract notions.

What are these rhythms that play such a critical role? Another passage from *Gesture and Speech* (Leroi-Gourhan 1964: 283) provides some explanation:

> The most important expression of visceral sensibility is
> connected with rhythms. The alternation of periods of
> sleeping and waking, of digestion and appetite, all such
> physiological cadences create a fabric upon which all
> activity is inscribed. These rhythms are generally
> connected to a wider fabric, that of the alternation of days
> and nights and of meteorological and seasonal changes.
> The result is a real conditioning that provides a steady basis
> for day-to-day operations but affects aesthetic behavior
> only inasmuch as its instrument is the human body.

In this passage Leroi-Gourhan describes two types of rhythms that act upon human comprehension. The first are physiological rhythms, i.e. the cadences that are generated by the human body. Leroi-Gourhan mentions sleeping and waking, and digestion and appetite, but there are others as well, such as circadian rhythms, electrical pulses in the

brain (Lakoff and Johnson 1999: 138), and human body temperature fluctuations during the day (Young 1988: 22). In addition, the human walking motion creates a rhythm that assists in the comprehension of time and space (Gamble 1999: 80).

Those physiological rhythms are intertwined with other natural rhythms generated outside of the body, the õwider fabricö to which Leroi-Gourhan refers. The yearly change of seasons, the phases of the moon, the cycles of day and night, cycles of winds, and the tides are all examples of these external, natural cadences.

To those two types of rhythms we might add a third: human-created, socially-determined rhythms. Consider the concept of the õweekö in its current incarnation of seven days. There is no astronomical or physiological basis for the seven-day week; it was created by humans and was self-imposed.[14] Yet we are subject to it just as we are subject to the seasons. This õmechanical time,ö complete with schedules, planners, and Microsoft Outlook, regulates the time of people today (Zerubavel 1981).

How might these overlapping rhythms õcreateö an individualøs sense of time and space? Consider a woman on a multi-day hike. Many layers of rhythms interact to give her an idea of the passage of time and of her movement through space. The first are her physiological rhythms. On flat stretches her walking motion and her respiration and heartbeat are steady, and the sense of time and space passing are likewise stable. As she begins to go uphill, her pace slows but her breathing and heart rate increase, signaling unconsciously that she is moving more slowly through space, and she may experience the sensation of time slowing down (a long climb in the summerøs heat can make time seem to drag on forever). Having climbed the hill, she has a more physical, visceral understanding of the hill than she would have had if she had simply viewed it from a distance, driven up it in a car, or studied it on a topographical map. Her physiological rhythms have helped create her sense of time and of the physical space of the hill.

All of this takes place against a backdrop of natural rhythms, such as the movement of the sun across the sky and the eventual change from day to evening to night. Perhaps the wind picks up each morning or there are regular afternoon thundershowers, marking the experienced passage of time with a sense of regularity.

By giving people a sense of time and space, these interwoven types of rhythms provide structure and therefore *predictability* to human existence (Zerubavel 1981:12). In this country we know that the weekend lasts two days, and that we are expected to be at work for five days thereafter, before another weekend arrives. We know that summer slowly gives way to fall and then to winter, and depending upon the geographic area we inhabit this may call for changes in our behavior.

The rhythmic predictability of our lives relieves us of the necessity of constantly focusing our attention on what to expect next as time passes. In the morning, if itøs a weekday, we know that we go to work or to school. Although one might have to think through what is going to happen on a given day, it is not normally necessary to think about *whether* to go to work or school. The advent of winter calls for a certain kind of clothing; we do not need to think about that fact, even though the weather does not progress in a linear fashion toward winterøs cold.

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[14] At other points in history three or five day weeks have been utilized.

The rhythmic predictability of life allows us to adapt our cognitive behavior accordingly, unconsciously accepting a continuation of the situation as it currently exists or an expected change that is taking place. Leroi-Gourhan divided human operational behavior into three stages. The first is õan automatic form of behavior directly connected with our biological natureö (Leroi-Gourhan 1964: 230). õPhysical attitudes, eating habits, and sexual behavior rest upon this genetic base, their modalities being strongly marked by ethnic nuances.ö A second stage, on the opposite end of the spectrum, is that of õlucid behavior, in which language plays a preponderant role.ö This is õfully consciousö behavior, during which the person is completely aware of his surroundings. Third, between those two types of behavior is what Leroi-Gourhan (1964: 232) referred to as õmechanical behaviorö:

> Most of the sequences we perform between waking and
> going to bed require only slight conscious intervention;
> they take place, not in a state of automatism where
> consciousness would be nil, but in a psychological twilight
> from which the individual is aroused only by some
> unforeseen occurrence. In the gestures we perform when
> washing and dressing or eating our meals or writing, the
> return to full consciousness is exceptional but it is decisive.

An example would be a person driving on the highway. Long periods of cruising at a constant speed allow a driver to think about things other than driving: where he is going, a meeting he just had, etc. Only when something unusual occurs, such as another driver suddenly changing lanes in front of him, must the driver focus again on the task at hand and respond accordingly. This is an example of mechanical behavior being suddenly ended, in favor of fully lucid or conscious behavior.

Returning to the hiking example above (which is more to the point in a discussion of the Paleolithic), walking down a trail can lull a person into a semi-conscious state that is measured by the rhythms of his breathing and striding. This õmechanical behaviorö can exist indefinitely, but it can also be interrupted by a sudden occurrence, such as tripping over a rock or seeing a rabbit dart across the path. Although Leroi-Gourhan did not explicitly tie the concept of rhythms to the concept of mechanical operational sequences, there is a firm connection: steady cadences tend to promote the mechanical stage of behavior, and the interruption of those steady rhythms leads to a disruption of that behavior and the intervention of fully conscious, alert activity.

Leroi-Gourhan (1964: 284-285) noted that the disruption of rhythms plays an important role in ritual behavior throughout the world:

> if we bear in mind that in all cultures many unusual motor
> or verbal phenomena occur as a result of individuals being
> õtransportedö to a mental state other than their normal one,
> we must acknowledge that disturbances of the rhythmic

balance do play an important role. In exceptional rituals ó
ecstatic revelations, states of possession during which
individuals dance or make music highly charged with the
supernatural ó one of the methods employed all over the
world consists in putting performers outside their daily
rhythmic cycles by breaking their physiological routines
with fasting and lack of sleep.
. . . .
The great mystical schools of India and China, of Islam and
the West, have all tended toward physiological control,
toward escape from rhythms through contemplation and
control of the visceral apparatus.

Even in a non-ritual setting the disruption of rhythms can have noticeable effects. In his
classic book on the Vietnam war entitled *The Things They Carried*, Tim OøBrien (1990)
described the effect that two weeks of unusual night patrols had on his unit. Their normal
schedules were thrown off:

Everybody was feeling it. The long night marches turned
their minds upside down; all the rhythms were wrong.
Always a lost sensation. Theyød blunder along through the
dark, willy-nilly, no sense of place or direction, probing for
an enemy that nobody could see.

Of course the disruption of rhythms can occur in a much more benign setting,
such as traversing the inside of the cave of Les Trois Frères. The Magdalenians were a
mobile people whose daily lives involved a great deal of walking in the open air.
Treading a path from one valley to another, or from a flint quarry back to a campsite,
produced a noticeable rhythm marked by oneøs breathing, heartbeat, and striding, and by
passing known landmarks. Although that set of rhythms might change as the trail
changed, those changes in cadence would not in themselves cause a disruption of the
õmechanicalö behavior that was well-suited for the travel.

Now take that same person and place him at the tunnel from Enlène that
constitutes the opening into Les Trois Frères, beginning the awkward journey toward the
Sanctuary and the image of the Sorcerer. Instead of striding at an even pace, he now has
to crawl, climb, balance carefully, step over obstacles and slide. External sources of
rhythms, such as the movement of the sun, have been eliminated. All of his normal,
comfortable rhythms have been disrupted. Daydreaming has stopped, and instead he
must focus on the task before him, as his mechanical behavior gives way to fully lucid
attention. Echoing OøBrien, we might say that his mind has been õturned upside down.ö
He has entered a state of full consciousness due to the disruption of his expectations and
cadences.

This is how rhythms, and the disruption of predictable rhythms, might affect oneøs
perception of Paleolithic imagery deep within caves. The Magdalenians did not construct
the cave of Les Trois Frères, but they took advantage of what was already there to create
the desired effect. The disruption of expected bodily rhythms wiped clean the viewerøs

slate of expectations and jolted him into fully alert behavioral status, preparing him for the viewing.

It is worth noting in this context that Clive Gamble gives õrhythmsö a central role in his rethinking of Paleolithic archaeology, presented in his 1999 book *The Palaeolithic Societies of Europe*. Gamble (Gamble 1999: 65) is interested in the õrhythms of social technology,ö and for him rhythms consist of õoperational sequences, movements along well trodden paths and attention paid to others.ö He asserts that õrhythms provide us with the conceptual link between the dynamics of past action and the inert residues of those actions,ö and that they link his two levels of analysis, locales and regions (Gamble 1999: 65). Although there is similarity between his use of the term and the use to which the term is put in this dissertation, his approach is not based upon cognitive processes and is difficult to apply in the context of conceptual blending.

iii. Rhythms from the Perspective of Cognitive Science: Image Schemas

We have been examining the role of rhythms in human perception, drawing on the work of French archaeologist/ethnologist André Leroi-Gourhan. But rhythms can also be understood from the standpoint of modern cognitive science. Looking at rhythms in terms of modern cognitive science provides us with an additional perspective, one that is complementary to Leroi-Gourhanøs view. In the next sections of this dissertation I will first revisit the concept of image schemas, and explore how that concept might provide an additional perspective on a rhythms analysis of the viewing of prehistoric parietal imagery. This discussion will draw heavily on the work of Mark Johnson, Professor of Philosophy at the University of Oregon, and in particular on his 1989 book *The Body in the Mind* (Johnson 1987) and his 2007 book *The Meaning of the Body* (Johnson 2007). Thereafter I will place all of the aforementioned concepts into the structure of conceptual blending, and examine how that perspective might enhance our understanding of that imagery.

As described above, Johnson seeks to describe a theory of meaning, imagination and reason that is based on embodied philosophy, the notion that human physical interaction with the world gives rise to much of human understanding about the world. A critical concept in his inquiry is the image schema.

Take, for example, the concept of õbalance,ö which was discussed above at p. 20. In our everyday physical movement through the world we encounter many examples of balance: walking, reaching for something on a shelf, carrying objects in both hands, riding a bicycle. The experience is so commonplace that we take no notice of it. This bodily experience is used to structure our understanding of the world around us, such as when we say that a candidate has presented a õbalanced argument,ö or we see a õbalance of powerö among nations. An image schema is thus used to create a framework that allows us to understand the world.

Rhythms are also an image schema; Johnson (1987: 119) refers to them as õcycles.ö The types of rhythms discussed above are cyclical, in that they begin with some initial state, proceed through a sequence of connected events, and end where they began, to start anew the recurring cyclic pattern (Johnson 1987: 119). Rhythms/Cycles,

as an image schema, are therefore one of the concepts we use to understand the world around us:

> This structure [of the cycle image schema] constitutes one of our most basic patterns for experiencing and understanding temporality. It provides us a way of understanding an enormous range of event sequences and, metaphorically interpreted, even nontemporal sequences such as numbers (Johnson 1987: 121).

Here we see the confluence of modern cognitive science and the thinking of Leroi-Gourhan. Johnsonøs view of õcyclesö as an image schema overlaps Leroi-Gourhanøs view that õrhythms are the creators of space and time, at least for the individual.ö Both Johnson and Leroi-Gourhan see rhythms/cycles as integral to an embodied understanding of time and space. Rhythms are the õcreatorsö of the human experience of space and time because they are a common, pervasive physical phenomenon, experienced minute by minute, day by day, and year by year by humans in their bodily movements, and are then utilized to construct frameworks by which otherwise abstract notions such as time and space are made comprehensible.

iv. The Role of Rhythms in Conceptual Blending

Utilizing the notion of image schema, we were able to reach some tentative conclusions about how they assist us in structuring our understanding of the world. It is now useful to consider the role that image schema play in the overall theory of conceptual blending, to deepen our understanding of how rhythms enter into humansø understanding of the world.

A key aspect of conceptual blending theory is the notion of frames. Frames, for Fauconnier and Turner (2002: 102), are structures or packages õwe already know about,ö in the sense that they are understood by us prior to the creation of any given mental space to which they pertain. Frames specify the õnature of the relevant activity, events, and participantsö (Fauconnier and Turner 2002: 104). They can be more or less specific. They might arise from oneøs particular culture or society, or they might be õlong term schematic knowledge,ö such as the frame of walking along a path (Fauconnier and Turner 2002: 40). Frames are invoked from background knowledge õto structure expectations and make inferences that go beyond whatøs immediately presentö (Coulson 2001: 34). An input mental space does not *need* to have a frame, however (Fauconnier and Turner 2002: 104).

For example, the mental space in which someone purchases coffee at a coffee shop could be framed by the notion of õcommercial transactionö (Fauconnier and Turner 2002: 102). Depending on the context, it might also be framed by the notion of õtaking a break from work,ö or õadherence to a daily routine.ö Mental spaces regarding a discussion among presidential candidates could be structured by a frame of õdebateö or a frame of õbattle.ö

Image schema are not the same as frames. õFrameö is a broader term, encompassing cultural and societal concepts as well as physical ones. An image schema could be part of a frame used to structure a mental space, as in the case of a fight

structured by the frame of "boxing match" with the image schema of "container" helping elaborate that frame (Fauconnier and Turner 2002: 104). In a different situation, a mental space may have only an image schema providing its structure.

Bearing these ideas in mind, we can ask how the image schema of rhythms might enter into conceptual blending. More particularly, how might that enter into the conceptual blending that is taking place in the experience of entering Les Trois Frères to view the Sorcerer?

The answer to the first question is that image schema can enter into conceptual blending in many ways. First, the image schema of rhythms, as noted above, might be part of what structures one or more mental spaces, either the input space or the blended space that results from them. Second, to the extent that rhythms are the basis of a person's experience of time and space, rhythms might underlie the notion of time and/or space within a particular mental space or within the blended space. Third, time and space are considered by Fauconnier and Turner to be vital relations, and therefore might play a role in the mapping of one mental space to another. A changed sense of time or space on a human scale could affect how that mapping takes place. Fourth, in the process of blending time or space are often compressed, such that a long period of time or a long distance might be shortened in a blend. Rhythms could affect that compression.

v. Conceptual Blending and the Disruption of Rhythms in Les Trois Frères

Having examined the notion of rhythms and how it might be understood from the perspective of cognitive science, we can return to Les Trois Frères and take a second look at the conceptual blends that might have been involved in the Magdalenian people viewing the Sorcerer. But before re-entering the cave, we should once again consider the rhythms of the normal lives of the Magdalenians – outside of caves – so that we might see how those rhythms were continued or disrupted upon entry into the painted cave.

As noted above, the Magdalenians were a mobile people, moving regularly through the steppe landscape in search of food to be gathered or hunted. Many of the astronomical and physical rhythms described above would have regulated their lives. Since they lived largely outdoors and without modern sources of light and heat, the change of the seasons would have had a larger impact on their lives than it does on ours today. When on the move, the rhythm of walking was part of what gave them a sense of the distance they had traveled. The phases of the moon and the rising and setting of the sun intermeshed with their bodily rhythms, creating the "tapestry" that governed their perceptions of time and space.

Inside the cave it was a different story. Here the sun neither rises nor sets; darkness prevails at all times. There are no wide open spaces, at least not any that can be readily discerned: the world only exists within the distance covered by the glow of your torch or oil lamp. There is no morning wind or afternoon thundershowers, and the seasons themselves become largely irrelevant since caves tend to maintain a relatively constant temperature throughout the year. Almost all of the astronomical rhythms that give a person a sense of his location in time and space are absent.

Some of the body's cadences remain intact inside the cave, such as the steadiness of one's heartbeat, but others less so. In some caves it may be possible to walk fairly normally, at least in sections of the cave, but in others such as Les Trois Frères there is no

possibility of õgetting into a rhythmö as you are forced alternately to crawl, edge sideways, stoop down, and step over obstacles. The ground can be quite slippery; there can be puddles of water, usually unanticipated. The comfortable predictability of a õmechanical operating sequenceö is not available.

   This disruption of rhythms would have affected the conceptual blends that a visitor generated. Consider again the hypothesized metaphoric blend that õEducation is a Journey.ö The Magdalenians, like people of every era, would have been familiar with the process by which someone comes to learn some skill or acquire some knowledge. During their lives they would have had to learn how to snare small game, knap flint for tools, and create a container for carrying water from the stream to the living area. They would have had an understanding of the process of education, not our formal educational system but perhaps individual or group instruction, apprenticeships and learning. At the same time, as a mobile people they would most certainly have understood the concept of a õjourney.ö In their daily lives it may have taken the form of a trip to a flint source 20 kilometers away, or a movement from a winter camp location to a summer camp location. Therefore, it seems logical to assume that the Magdalenians could easily have constructed a conceptual blend in which a mental space pertaining to education/learning was blended with a mental space pertaining to a journey, with the result that education was understood to have many attributes of making a journey.

   That conceptual blend would, however, have been disturbed by the circumstances of moving through the cave of Les Trois Frères to see the Sorcerer. The disruption of astronomical and physical rhythms would have changed this blend, by removing clear notions of time and space from the input spaces and from the blend. For instance, the mental space structured by the frame of a õjourneyö might normally include elements such as walking, being able to see for a great distance in each direction, seeing the sun move through the sky, and spending a fair amount of time enroute. In the case of Les Trois Frères, those notions would not be projected to this blend. Here the journey is slow, challenging, and does not involve repetitive striding at all. Here the sun is not visible and there is no distinction between day and night. The typical frame of õjourneyö can no longer be used to structure the input space and will not be projected in its entirety to the blend. The blend ó that is, the human scale *comprehension* of the situation in which the visitor found himself ó leaves the viewer much more confused, being loosened from the safe moorings of easily-understood time and space. The less comfortable the blend, the less able the viewer to remain in a õmechanicalö mode, and the more receptive the viewer would be to stimuli offered by other things. A new blend has been created, one in which education, here the process of coming to know the cave and its imagery, including the Sorcerer, is understood as a slow, arduous process that takes an indeterminate amount of time and takes place in an undefined spatial realm. The interruption of the viewerøs rhythms tears asunder the fabric on which his activities are inscribed, allowing him to weave a new fabric, with new frames and new conceptual blends, and through that process to stoke his imagination ó perhaps his anxiety ó and generate new meaning for himself.

(d) The Sorcerer Image: Intimacy is Physical Proximity; Distance is Unfamiliarity

I contend that the people who created the Sorcerer placed it in that location precisely because that location would be inaccessible, both physically and to some degree visually, to the people viewing the image. By doing so, they took advantage of the primary metaphor INTIMACY is CLOSENESS, in which *intimacy* is understood as *closeness*, and conversely *unfamiliarity* is understood as physical *distance*. A related metaphorical blend may also be at work here: if *understanding* is *grasping*, as in the statement õshe has a good *grasp* of practice theory,ö then being unable physically to touch or grasp something could be understood as an inability to comprehend it.

Today we are very comfortable understanding emotional or social proximity in terms of physical proximity. Personal intimacy, an abstract concept, is understood by reference to easily measured and understood physical proximity between two objects. For example, we have no difficulty understanding a friend who describes a relationship in the following terms: õWeøve been close for years, but weøre beginning to drift apartö (Lakoff and Johnson 1999: 50). Both õcloseö and õdrift apartö refer to the intimacy of the relationship, but they are concepts appropriated from the world of physical space. We integrate the concepts of physical proximity, on the one hand, and social proximity, on the other, into an easily understood blend, where the intimacy of the relationship is understood in terms of measured physical space.

That blend is easily comprehended because physical proximity is something we constantly experience in our daily lives. During each day we are in close physical proximity to many objects, and far from many others. Generally speaking, we are more likely to be familiar with objects that are close to us, than with objects we cannot approach. I am more familiar with the objects on my kitchen counter than I am with the far ridge I see out of the kitchen window. This would have been equally true during Magdalenian times, and therefore it is likely that those people also understood social closeness in terms of physical closeness.

Similarly, if one wishes to gain familiarity with an object she will desire to inspect it closely, be near it, hold it. If an object is out of reach, that level of familiarity will not be possible. If UNDERSTANDING is TOUCHING, then being unable to touch something will prevent gaining a full understanding of it. A metaphor pervasively represented in common language, pertinent here, is UNKNOWABLE INFORMATION IS OBJECTS WE WILL NEVER HOLD, OR CANøT HOLD (Sweetser 2004).

In this way physical touching creates a connection with an object or a person. Consider the effect of greeting someone with a handshake or, even more to the point, a hug. That physical connection creates and/or emphasizes the emotional or social bond between two people. The same might be said of relationships between people and places or objects. To take a modern example, recently the New York Yankees completed a new stadium to replace the one in which they had been playing for decades. As the time at the old stadium drew to an end in 2008, many fans left their handprints on the wall of the old stadium, attempting to continue the psychological connection with the old ground by means of a transitory physical connection.

At over four meters off the ground, the Sorcerer is too high to touch and you cannot even inspect it closely. The outcropping of rock that projects in front of it prevents you from standing directly below it, and the best you can do is look up at it from a skewed angle. Thus the image remains somewhat remote and unapproachable, not something you could truly get to know. This placement takes advantage of the notion that while intimacy is closeness, distance is unfamiliarity. Preventing intimacy with an image maintains a social or possibly even a spiritual separation between viewers and the image, and underscores its significance.

This primary metaphor INTIMACY is CLOSENESS is also coupled with another primary metaphor, RELATIONSHIPS are ENCLOSURES, to give meaning to the location of the Sorcerer. According to Lakoff and Johnson (1999: 53), that latter primary metaphor works in the following manner:

RELATIONSHIPS are ENCLOSURES.

Example: õWeøve been in a close relationship for years, but itøs beginning to seem confining.ö

Primary Experience on which it is based: Living in the same enclosed physical space with the people you are most closely related to.

The Sorcerer is set off from the rest of the Sanctuary by the outcroppings that jut out into the chamber in front of it. The Sorcerer is simultaneously part of the chamber and not part of the chamber; it is not clear whether it is part of the viewerøs enclosure or not. Even when one stands in the furthest portions of the Sanctuary the image floats above you, not entirely in your space. If relationships are understood as enclosures, it follows that even to be in a relationship one must be within the same enclosure as someone else. By placing the Sorcerer in a position that is ambiguous with regard to whether it is in the same confined space as a viewer, its creator called into question whether it is even possible to have a relationship with the Sorcerer.

And so it seems possible that the creators of the Sorcerer wanted to suggest a more complex relationship with that Being than simply to say that it dominates or controls human activities. The application of modern cognitive science has expanded our interpretation beyond the notion of õdominance.ö By putting it in the physical background of the Sanctuary, perhaps they sought to convey metaphorically that the Sorcerer plays its role, whatever that may be, in the cosmological background. To use a modern theater metaphor, it works õbehind the scenes.ö This analysis could apply regardless of whether we consider the Sorcerer image to be a mythical being or a person dressed in an animal costume.

There is an additional aspect of the INTIMACY is CLOSENESS metaphor in play in the Sanctuary. In contrast to the distance and inaccessibility of the Sorcerer, the mass of engravings below it are easily reached and directly in front of the viewer. Proximity here is quite possible, intimacy is easy. But thereøs more. Because the engravings are so fine and can only be seen upon close, careful inspection, holding the

light at many different angles, closeness is actually *required* of the viewer. The viewer must become intimate with the images because she cannot see them any other way. Moreover, this viewing takes place inside a semi-enclosed space, the end of the Sanctuary where the outcroppings create a sense of confinement or where, if the images are on a low protuberance, one has to place oneself on the ground under the overhanging limestone. The physical apprehension of those images is exactly the opposite of how one feels trying to engage with the Sorcerer image above them.

The intimacy obtained by the viewer of these engravings echoes that which was demanded of the creators. To engrave this rock one had to position oneself in multiple poses, often contorted and uncomfortable positions, directly next to or under the rock on which the image was to appear. In addition, the image-makers had to have a detailed knowledge of the rock surfaces if they were to utilize the rock shape to give the image three dimensional relief. Many of the engravings follow and make use of the natural contours of the rock surface.

5. *Summary*

As was noted above, I am not satisfied that a metaphor and/or blending analysis of individual images from the Upper Paleolithic will yield scientifically defensible interpretations of those images. Blending theory does provide a template for the analysis of those images, but that template may be too forgiving or flexible to give a researcher much comfort that detailed findings are reliable. Such an approach might yield useful ideas provided a sufficiently multi-scalar approach is used.

By contrast, I would argue that an interpretation of the positioning and location of those images based on embodied cognition, image schemas and primary metaphors does raise intriguing possibilities. There is persuasive evidence, in my opinion, that these aspects of human cognition have not changed in the intervening millennia, and that it is therefore reasonable to apply them to the physical aspects of engaging with Ice Age art. This approach bears some resemblance to phenomenological approaches but is built, in my view, on a much more solid foundation.

CHAPTER 10
Case Study: The Neanderthal-modern human Transition

1.   Background: Neandertals and modern humans in Europe

(a)   Introduction

For thousands of years prior to the arrival of *Homo sapiens sapiens*, the Neandertals lived in Europe, the Middle East and Western Asia. Having appeared in Europe between 300,000 and 250,000 years ago (Gamble 1999: 174), the Neandertals continued to inhabit Europe until approximately 27,000 years ago, coexisting eventually with anatomically modern humans (õAMHsö). By that time, it appears that the Neandertals lived in a far more restricted geographic area, perhaps only in the Iberian Peninsula.

One of the easiest intellectual traps into which we might fall while studying the Ice Age is to make the assumption that the life experiences of all Neandertals or all anatomically modern humans were alike in all places and at all times. These were people who lived in relatively small groups spread out throughout the landscape, with limited interaction between groups, and no easy means for culture and language to be unified across a broad geographic area. Our natural proclivity, one that is exacerbated by the dearth of information available, is to conflate all such people into a single culture or set of lifeways. But life during those times was more complex and varied than we typically believe (and that we will ever know, given the poor resolution of the archaeological record). This point was eloquently and insightfully made by historian Barbara Tuchman in her study of 14th century France, *A Distant Mirror* (Tuchman 1978), in which she drew attention to the complexity of life and how the historical feature on which we are focusing at any given time is not necessarily representative of the broader experience of a people. Of the social upheaval of that time period she writes (Tuchman 1978: 234):

> Charles reigned in a time of havoc, but in all such
> times there are unaffected places filled with beauty and
> games, music and dancing, love and work. While clouds of
> smoke by day and the glow of flames by night mark
> burning towns, the sky over the neighboring vicinity is
> clear; where the screams of tortured prisoners are heard in
> one place, bankers count their coins and peasants plow
> behind placid oxen somewhere else. Havoc in a given
> period does not cover all the people all the time . . . .

This is even more true of the Ice Age, with its dispersed population and relatively poor communications, than it was of medieval France.

We would be similarly mistaken if we were to assume that there was a single climatic condition with which the Neandertals had to deal. On the contrary, during the over 250,000 years that the Neandertals lived in Europe and Western Asia, there were a great variety of climatic conditions, colder and warmer periods. Just as the Neandertals were not one people, so too their environment changed many times over the course of their tenure (Gamble 1999; Mellars 1996; van Andel, et al. 2003).

(b)   Neandertals: Mobility and Proximity

The mobility patterns of Neandertals and other hunter-gatherers is difficult to document in the archaeological record. Lieberman suggests that we can find signs of mobility patterns by studying seasonally deposited bands in teeth and cortical bone robusticity (Lieberman 1998). He also suggests that data on the seasonal hunting of animals can give us information on seasonal mobility.

A number of researchers have utilized resource procurement data in an attempt to understand Neandertal mobility patterns. For example, Féblot-Augustins (1993) studied Neandertal raw material transfers, and argued for north-south movements of Neandertal populations between similar (as opposed to complementary) habitats. Geneste (see 1999: 242) identified the Eemian interglacial (OIS 5e, 118 ó 128 Kyr BP) as a watershed in terms of the use of local materials versus those further away. Overall, Gamble (1999: 242) concludes that Neandertal life remained local as compared to AMHs, based on raw material transfers. However, Cep and Waiblinger (2001) utilized studies of raw material procurement and artifacts in Middle Paleolithic contexts in SW Germany to argue that Neandertals had a higher degree of mobility than AMHs in that area. Spatial studies suggest that the Neandertals utilized these sites in relatively small groups of 5 to 10 individuals, though there may have been utilization of some sites by larger groups as well (Mellars 1996: 309). In the case of the Swabian Jura, occupation intensity at the sites provides evidence for higher population densities during the Aurignacian than during the Middle Paleolithic (Conard, et al. 2006).

A key point for Gamble is that õthe use of raw materials remains predominantly localö during this time period (Gamble 1999: 205), which fits with his overall conclusion that the Middle to Upper Paleolithic transition had much to do with the expansion of the õlandscape of habitö and the extension of social ties (Gamble 1999: 242). Gamble (1999: 217) discusses lithic technology in some depth, seeking to lay the groundwork for future social analyses when there is more data regarding links between lithic techniques and different places, gatherings and social occasions. Overall, he concludes that Neanderthal society õwas founded on intimate and effective networks,ö and that õsocial interaction was not necessarily dependent on spoken language but did involve a system of communication dedicated to social relations. He finds no evidence for õsocial occasionsö in Neanderthal society. He finds that they lived in õlandscapes of habitö rather than õsocial landscapes,ö such that their activities were õroutinizedö (Gamble 1999: 265-267).

(c)   Neandertal Cognition

Many articles have been written about cognitive and cultural capacities of the Neandertals, and how this might have affected their social lives. An example is Brian Hayden's õThe cultural capacities of Neandertals: a review and re-evaluationö (Hayden 1993). Hayden (1993: 137) argues that there is no great cognitive gap between Neandertals and AMHs, that Neandertals had õthe full complement of human facultiesö even if they were not quite capable õof doing nuclear physics or calculus.ö An opposing viewpoint is provided in Kuhn and Stiner's (1998) article questioning whether õMiddle Paleolithic creativityö is an oxymoron. They find little evidence of creativity in the Neandertal archaeological record, but conclude that õthere was not necessarily anything stifling creativity or holding back change among Neanderthals and their forebears; it was simply that there was little spurring it on.ö There has been much debate about the language capabilities of Neandertals (Chazan 1995; Mellars 1996: 387; Mithen 2006). Very recently, claims have been made that perforated and pigment-stained marine shells dating to as early as 50,000 B.P. from the site of Cueva de los Aviones in southeastern Spain demonstrate that Neandertals were producing body ornamentation prior to the arrival of AMHs, and that therefore there could not have been genetic/cognitive bar to Neandertal symbolic behavior (Zilhão, et al. 2010).

(d)   The Relationship Between Neandertals and Anatomically Modern Humans

There is general agreement that the human lineage evolved in Africa, and then spread to southern Eurasia as Homo erectus (Templeton 2002). After that point the issue is subject to a great difference of opinion. Traditionally, the debate has been between the Out of Africa model, which argues that anatomically modern humans first arose in Africa approximately 150,000 years ago and spread from there throughout the world (Aiello 1993; Stringer 2001; Tattersal 1997; Templeton 2002), and the Multiregional model, which denies the African origin of modern humans and argues that following the exodus of Homo erectus from Africa, gene flow between populations in different parts of the world continued, although it was restricted by the groups' isolation from each other. The isolation allowed groups to become differentiated from each other, though they all remained part of the same species. The result of that continued gene flow was that modern humans õaroseö not only in Africa but in other parts of the world as well (Aiello 1993; Stringer 2001; Templeton 2002).

The traditional debates about hybridization and replacement have in recent years to some extent been superseded by evidence from genetic studies. The first major DNA analysis of Neandertals was performed by Krings, et al. (1997). Krings et al. performed mitochondrial DNA analysis on the Neandertal type-specimen from Feldhofer cave in the Neander valley (õNeandertal 1ö), which was discovered in 1856. Later analysis of the Feldhofer site yielded a date of 40,000 B.P. for both the Neandertal 1 specimen and a second individual (Schmitz, et al. 2002). Krings et al. concluded that this specimen's DNA falls outside the variation of modern humans, which suggests that the Neandertals went extinct without contributing to the gene pool of modern humans. Krings et al. also estimated that human DNA diverged from Neandertal DNA approximately 550,000 ó 690,000 years ago, based on the assumption that humans and chimpanzees diverged 4-5

million years ago. Using the same analysis they estimated that modern human DNA is 125,000 to 150,000 years old.

In 1999 Krings and others (1999) reported their findings on a second individual from the Feldhofer site. Here too they found that the Neandertal mtDNA in question fell outside the range of modern humans. They concluded that taken together, the results support the concept that the Neandertal mtDNA evolved separately from that of modern humans for a substantial amount of time and lend no support to the idea that Neandertals contributed mtDNA to contemporary modern humans. They estimated the divergence of modern humans and Neandertals at 465,000 years ago.

In 2000 Ovchinnikov et al. (2000) reported a mitochondrial DNA analysis of Neandertal remains from Mezmaiskaya Cave in the northern Caucasus. The sample was a portion of the rib of a fragmentary skeleton of a Neandertal infant, dated at 29,000 B.P. Their analysis indicated similarities between the DNA of those remains and the Krings et al. Neandertal from Germany. They concluded that their results provided no support for the multiregional hypothesis of modern human evolution. They estimated the divergence of AMH and Neandertal mtDNA at between 365,000 and 853,000 years ago, and they estimated the age of the earliest modern human divergences in mtDNA to be between 106,000 and 246,000 years ago.

Also in 2000, Krings and others (2000) reported on DNA sampling of 15 Neandertal skeletal remains from Vindija, Croatia. These remains were dated to 42,000 years ago. This analysis was aimed at measuring the diversity within Neandertal DNA rather than comparing Neandertals and modern humans. Of importance here is that the authors concluded that it is õhighly unlikelyö that a Neandertal mtDNA will be found that is sufficiently divergent (from other Neandertals) to represent an ancestral lineage of modern European mtDNAs (Krings, et al. 2000: 145).

As a complement to the above analysis, Caramelli et al. (2003) sampled the Mitochondrial DNA of the remains of two AMH individuals recovered from Paglicci cave, Southern Italy. Caramelli et al. found that the DNA of their AMH individuals fell within the range of variation of todayøs humans, but that there is a significant genetic discontinuity between those AMH individuals and the Neandertals.

Against that background, the very recent sequencing of Neandertal DNA provided surprising results. Green et al. (2010) reported in the journal Science that there was in fact a low level of mixture of Neandertal and modern human DNA, and that the closest genetic relationship is between Neandertals and Humans from Europe and Asia, as opposed to Africa. Curiously, the data thus far indicate that the interbreeding of Neandertals and modern humans most likely took place in the Middle East perhaps as long ago as 80,000 B.P., as opposed to the õTransitionö time period of 45,000 to 30,000 B.P. in Europe.

(e)   The Arrival of Anatomically Modern Humans in Europe.

The timing of the entry of anatomically modern humans into Europe is, of course, the subject of great debate. Much of the argument focuses on the dating and attribution (as between Neandertals and AMHs) of artifacts and hominin remains in the time period between 35,000 and 45,000 B.P. The geographic location of the finds is also important, since the Out-of-Africa model suggests that we should find a progression of AMH

remains and artifacts spreading from the Levant to Europe during that time period (see Mellars 2004).

With regard to Eastern Europe, Kuhn et al. (Kuhn, et al. 1999) have reported Initial Upper Paleolithic stone tools in Turkey dating to 41,000 B.P. Trinkhaus et al. (2003) have reported the find of a modern human mandible in Romania, dating to 34,000 to 36,000 B.P. The Bulgarian site of Bacho Kiro has yielded remains that are apparently modern human, with dates in the 39,000 to 34,000 B.P. range (Churchill and Smith 2000), and a date in excess of 43,000 B.P. (Kozlowski 1988). Layer 3 in Willendorf II, Austria, has yielded dates of approximately 38,000 B.P. in association with an Aurignacian industry (Damblon, et al. 1996). The site of Istálloskkö has yielded dates of 44,300 and 39,800 through carbon dating (Richter, et al. 2000).

From the site of Hahnöfersand on the Elbe River near Hamburg, Northern Germany, there is a single fossil specimen dated at approximately 36,000 B.P. This specimen is an isolated frontal bone, and was not found in association with any artifacts (Churchill and Smith 2000). In Southern Germany, the site of Vogelherd yielded a modern human cranium long thought to be at least 32,000 years old (Churchill and Smith 2000), but thereafter dated to the Neolithic (Conard, et al. 2004). Geissenklösterle Cave in SW Germany has Early Aurignacian complex dates with a mean of 38,400 B.P. for ^{14}C and 40,200 B.P. for Thermoluminescence (Richter, et al. 2000), but these dates are disputed by those who see the Aurignacian as having been developed by Neandertals (Zilhão and d'Errico 2003). In this time range we also have the Aurignacian site of Keilberg-Kirche in Bavaria, though there the unity of the assemblage and its association to the dated material õcan be questionedö (Richter, et al. 2000: 85).

The site of El Castillo, Spain is also important with regard to its age. At that site both Aurignacian stone tools and hominin fossils have been found, with dates in the 40,000 ó 38,500 B.P. range (Cabrera Valdes and Bischoff 1989; Churchill and Smith 2000). Churchill and Smith (2000) assert that it is not possible to designate the human remains as either modern human or Neandertal. However, the artifacts at the site indicate that at around 40,000 years ago people at that site no longer made Mousterian technology, but rather shifted to Upper Paleolithic blade production, with new bone-working techniques being introduced approximately 39,000 to 38,500 years ago (Straus 1992: 67).

For the view that these dates are overestimates, and in fact modern humans did not arrive in Europe until 36,000 B.P. or thereafter, see the work of Zilhão and d'Errico (d'Errico, et al. 1998; Zilhão and d'Errico 1999, 2003). They contend that the Aurignacian material culture was the product of Neandertals, who created these objects prior to contact with modern humans.

(f)   *The Neandertal-Modern Human Transition.*

If we define the time period of the Transition as being roughly from 40,000 to 30,000 B.P. (note that Lewis-Williams (2002) considers it to be 45,000 to 35,000) then the Transition took place during a relatively warm phase, the Interpleniglacial, preceding the temperature downturn to the Last Glacial Maximum. More particularly, the arrival of AMHs into Europe may have largely taken place during the Hengelo Interstadial, 39,000 to 36,000 B.P. (Bocquet-Appel and Demars 2000; Gamble 1999; Mellars 1998). There is

evidence that the climate fluctuated very rapidly during this time period (Stringer and Davies 2001; van Andel and Davies 2003).

Gamble (1999: 269) argues that õthe transition enshrined in the archaeological units of the Middle and Upper Palaeolithic was about the emergence of individuals as creative agents beyond the limitations set by the rules of co-presence.ö He contends that the Transition marks the appearance of extended social networks, and by significant differences in the õrhythms that structure actionö (Gamble 1999: 351-352) (compare Conkey 1980; Gamble 1999: 351-352; see also Gosden 1994).

The Transition can also be viewed in the context of whether a revolution in human behavior took place at that time. We should note here that the concept of õmodern human behaviorö is a slippery one (Henshilwood and Marean 2003). On the one hand, it does appear that new forms of action, both in a qualitative and quantitative sense, took place in Europe during the Transition. Perhaps most noteworthy are the developments in symbolic representations, Paleolithic õart.ö During the Upper Paleolithic we find the first true figurative art, including for example intricate imagery on the walls of caves and figurines carved from mammoth ivory (Conard and Floss 2000; Conard 2002; Conard 2003; Conard and Uerpmann 2000; Conkey 2003; Lewis-Williams 2002). There is also evidence for music: flutes have been found (Conard, et al. 2009; Hahn 1988; Hahn and Münzel 1995).   It has been argued that this resulted from mutations in the human brain (Klein 1995, 2000; Mithen 1996).

On the other hand, there is a growing body of evidence, both with regard to pre-existing Neandertal populations and with regard to developments outside of Europe, which suggests that the European record does not provide evidence of a õrevolutionö in human social life (Ahern, et al. 2004; Henshilwood, et al. 2004; Henshilwood 2002; McBrearty and Brooks 2000; Zilhão and d'Errico 1999). Gambleøs (1999: 287-288) characterization seems to be particularly apt:

> The period between 60 and 33 Kyr presents a complicated
> and longwinded transition, far removed from the
> expectations raised by phrases such as õthe human
> revolutionö . . . it was a polythetic process.

Rather than being a revolution, we might more properly think of it as an õAufhebungö in the Hegelian sense, a situation in which there is simultaneously both the preservation of the old condition and a transcendence of that old condition through a change to something new.

Archaeologists have identified a number of õtransitionalö industries: assemblages of lithic and other artifacts that appear to reflect the Neandertal-modern human transition. One of those industries, the Châtelperronian, is the subject of my attempt to apply blending theory to the Transition, and therefore is worth describing in further detail.

Between 1949 and 1963, French archaeologist/ethnologist André Leroi-Gourhan conducted excavations at a Paleolithic site known as Arcy-Sur-Cure near Yonne, France. Leroi-Gourhan identified three archaeological layers as belonging to the "Châtelperronian" culture. Those layers contained 36 personal ornaments, including perforated or grooved canines of fox, wolf, bear, hyena, and red deer and perforated or grooved incisors of bovid, horse, marmot, bear, and reindeer. There are also small

perforated beads made of ivory, and incised bones. The assemblage also contains 142 worked bones, such as projectile points, awls, pins, and assorted tools (d'Errico, et al. 1998; Movius 1969; White 2001).

There is also a stone tool assemblage that differs from the traditional Neandertal Mousterian industry. The dominant production system for these lithics is geared toward the extraction of blades from prismatic cores. This is significant because blades are typically seen as one of the defining characteristics of the Aurignacian industry, associated with modern humans, notwithstanding the fact that some blades do appear as part of earlier industries. These blades were often transformed into Châtelperronian points, which Leroi-Gourhan and others have interpreted as the lithic components of hafted knives or composite projectiles.

For years there was debate regarding who made the Châtelperronian tools and personal objects. Until 1979, the Châtelperronian was considered to be the work of modern humans. In that year, François Leveque uncovered a substantially complete Neandertal skeleton, in association with Châtelperronian tools, at a site called Saint-Césaire in France. In the 1990s, Hublin et al (1996) applied high-resolution computed tomography to a human tooth found by Leroi-Gourhan at Arcy, and demonstrated that it belonged to a Neandertal child. Although there are always issues regarding post-depositional disturbance of the Châtelperronian artifacts, the existence of a 10 cm sterile layer above the Châtelperronian layers at Arcy (i.e. between the Châtelperronian layers and the later modern human Aurignacian layers) and the lack of Aurignacian tools in the Châtelperronian layers (d'Errico, et al. 1998), imply that those artifacts did not migrate downward from the layers attributed to modern humans. Moreover, since there were waste products of bone tool manufacturing in the Neandertal layers at Arcy, it seems less likely that all of the artifacts at Arcy were the result of õtradeö with modern humans. Rather, it appears that they were made at the site. It is now fairly well accepted that the Châtelperronian industry was made by Neandertals.

The components of the Châtelperronian assemblage can all be found in other Neandertal contexts. There are occasional finds of bone points, awls, incised lines or zigzags in bone, and perforated bones and teeth in those contexts (Hayden 1993). Blade tools occur in the Mousterian, and in fact even in the Acheulean (Hayden 1993). Blade-like flakes were numerous in the Mousterian layers of Arcy-sur-Cure, although actual blade tools are rare (Farizy 1990). The Châtelperronian assemblage at Arcy-sur-Cure is however unique with regard to the volume and variety of these items in a single assemblage.

Although the Châtelperronian artifacts appear to have features in common with those made by modern humans, the Châtelperronian artifacts do not appear to be simply "copies" of Aurignacian artifacts. Stone tools are a good example. Lithic analyses have indicated that the reduction sequence for Châtelperronian stone tools is different than that for Aurignacian tools, and is based on earlier techniques known as the Mousterian of Acheulean Tradition (MAT) or the "Denticulate Mousterian," techniques associated with Neandertals (Farizy 1990: 324; Mellars 1996). Mellars (1996: 414) has argued that the geographical distribution of the Châtelperronian mirrors that of the MAT.

Another example of the ambiguity of Châtelperronian artifacts can be found in the bone tools. Typically, bone tools are associated with modern humans, not Neandertals. The bone tools found at Arcy have some features in common with Aurignacian bone

tools, but in other ways they differ from them:

> Although nondiagnostic awls, points, and rods are present
> in both the Châtelperronian and the Aurignacian layers, no
> typical Aurignacian bone tools such as the lozenge-shaped
> points were found in the Châtelperronian. Reindeer antler,
> used as a raw material in the Aurignacian, was totally
> neglected in the Châtelperronian, where the use of ivory
> was three and a half times more frequent. Small, thick awls
> on short bone fragments are found exclusively in the
> Châtelperronian levels (d'Errico, et al. 1998: S11).

The time period during which the Châtelperronian industry was produced is the subject of considerable debate, and the resolution of that issue has profound implications for the larger debate about Neandertal symbolic abilities. There was an exchange of articles in Current Anthropology in 1998 and 1999 on the subject. D'Errico et al. (1998) argued that the Châtelperronian was created prior to the arrival of modern humans in Southwest France, and therefore was produced by Neandertals without the influence of modern humans. This view requires Neandertals to have had the ability to think symbolically, and its proponents have more recently offered evidence tending to support that point (Zilhão, et al. 2010). It is worth noting that the Neandertals could have had a rich symbolic life that either did not involve material culture (e.g. a rich story-telling tradition) and/or that involved material representations on organic substances that have not been preserved.

The opposite position has been championed by Paul Mellars, who has argued that the available ^{14}C, Thermoluminescence and Electron Spin Resonance dates for the Châtelperronian cluster in the time range of 33,000 to 38,000 BP, after the arrival of modern humans but during the time when SW France appears to have been a refuge for Neandertals (Mellars 1999). This view is more commonly held, the argument being that it would have to be an amazing coincidence for Neandertal material culture, which apparently remained relatively static for tens of thousands of years, to have developed quickly and independently just at the time of the arrival in Europe of anatomically modern humans (Mellars 2005; Mithen 2006). The timing issue can be resolved in this latter manner without making any assumptions regarding Neandertal symbolic abilities.

However, since Neandertals are typically viewed as being unable to think symbolically (Kuhn and Stiner 1998; Renfrew 2009), the common view of the Châtelperronian assemblages is that Neandertals were mimicking modern human artifacts without being able to comprehend the symbolism behind those artifacts.   For example, Mithen (2006: 232) argues that õthe final Neanderthals in Europe were imitating the symbol-using modern humans without understanding the power of symbolsö; Lewis-Williams (2002: 95) opines that with regard to body adornment, the Neandertals õcould mimic without being able to take over their full meaningö; and Coolidge and Wynn state that Neandertals gave their Châtelperronian stone tools shapes reminiscent of Aurignacian tools through a process of õemulation,ö which is õa form of observational

learning in which the subject understands the goal but invents his or her own procedure for achieving itö (Coolidge and Wynn 2004: 478).

2. Application of Metaphor and Blending Theories to the Neandertal – modern human Transition

(a)   Human Identity from the Perspective of Blending and Metaphor

i. Mental Spaces and Metaphors

Studies of human identity have a long history in anthropology and archaeology. Blending theory also addresses the question, approaching identity from the perspective of mental space theory. Although it is beyond the scope of this dissertation to present a comprehensive discussion of identity, the mental space approach to identity is particularly useful in connection with culture contact issues generally and the Neandertal-modern human Transition more specifically, and I therefore present an overview of blendingøs approach to identity in order then to consider the Châtelperronian artifacts of Arcy-sur-Cure.

With regard to identity, Fauconnier and Turner (2002: 205) write:

> Personal identity itself involves a diffuse network of mental spaces whose compression in the blend creates the unique person. Conceptually, a person is involved in mental spaces over many times and places, through many changes. All those spaces contribute to a blend that has the single unique person. There is a physical material anchor for this conceptual blend ó the active living biological body that we can see and with which we can interact. We can hear its voice, and it can hear ours. When the person dies, the conceptual network with the unique person persists for us, if not for the person. But the material anchor is gone.

In this conception, a personøs identity is composed of a large number of mental spaces, many of which themselves are blends, and those mental spaces are then blended into a larger, very complex blend that constitutes the identity of that person. The individual mental spaces reference different elements of that personøs identity, things in which the person engages, experiences that person has, such as social relationships. So, for example, an undergraduate scholar-athlete at Cal might have individual inputs from the sport she plays, her academic pursuits, her social life, her family life, events that have happened while she was in high school and college, etc. The mix of all of those creates her identity. A personøs conception of her own identity may be somewhat different than how others view her identity, not only because she knows more about her own life than others might know, but also because she places relatively greater importance on some aspects of her identity than they do.

Fauconnier and Turner (2002: Chapter 12) argue that a personøs identity, created in the manner just described, can remain constant across frames. In other words, whether

a person is considered in the context of his athletics or his academic work, whether he is in a family situation or in a social relationship, there is something constant about his character regardless of the situation. We have an understanding of õGeorgeö ó what kind of person he is ó regardless of whether we are thinking of him as a musician or as a father. We can utilize that blended character to predict how he might act in novel situation, such as saying õGeorge is the kind of guy who would help a Grandmother across the street.ö We know what kind of person he is, what character he has, and extrapolate from that knowledge to predict how he would act in a new situation, one in which we have never seen him.

A personøs identity does not remain static, but rather evolves over time, as he gets involved in new activities or meets various challenges in the activities in which he is already engaged. For example, a manøs identity as a student might change if he is accepted to a prestigious graduate program, on the one hand, or if he flunks out of college, on the other. He might view himself differently after those events, and others might also modify their views of him. Brück (2004: 311) describes the situation succinctly:

> In other words, identity is not something that people have,
> an unchanging set of qualities; rather, it is an ongoing act of
> production ó an inherently fluid set of properties under
> continual construction and revision.

Identities of different people can be blended. In their example of a modern day philosopher engaging in a debate with Immanuel Kant (discussed above at page 26, Fauconnier and Turner (2002: 253-254) describe how that modern philosopher might blend her own identity with that of Kant in order to address some difficult philosophical issue:

> Perhaps the modern philosopher has taken up a classic
> philosophical problem of the sort Kant might have
> considered, or that he pursued only briefly. The
> philosopher, stymied, asks herself, õIf I were Kant, how
> would I attack this problem?ö This scenario launches a
> blend ó one that can then be run creatively and indefinitely
> ó in which there is a single philosopher. The modern
> philosopher uses her knowledge of Kantøs character and
> identity, and her own intellectual character, tastes, and
> interests, in order to run the blend ó that is, to õbecomeö
> Kant in some respects as she approaches the problem.

The input spaces for this blend are structured by the identities of Kant and the modern philosopher, respectively, and therefore from the point of view of identity this is a double-scope blend (Fauconnier and Turner 2002: 254).

Identities can be augmented, or extended, by the use of material objects. A souvenir from a past trip might bring to mind a mental space that can be blended with the other mental spaces that together form a personøs identity, adding to that identity or,

however temporarily, emphasizing one portion of that identity over others. A person who had been to the Oktoberfest in Munich might have brought home a souvenir from that party which, when viewed or worn, activates a mental space of him as a "party animal," and that mental space is then blended with others to make up his sense of self-identity.

Group affiliation can also be established in this manner. Someone wearing a Cal sweatshirt is drawing attention to his membership in a larger group. The attributes of that larger group are projected to the blend of that person's identity. Seen from the perspective of metaphor, the person wearing the Cal sweatshirt is drawing on the source domain of the Cal Bears to understand himself, with his own identity being the target domain of the metaphor. The same is true of someone wearing a New York Yankees cap or having a United States Marine Corps sticker on his truck. A person's relationships to others are used to define the identity of that person, all through conceptual blending.

A more Paleolithic-oriented example might be the hanging of an animal's tooth as a pendant around one's neck: this might bring to mind a specific event involving that animal or it might be an attempt to draw into one's character and identity the characteristics of that type of animal, for example, to draw connections between a person and the fierceness or friendliness of that type of animal. The pendant acts in that situation as a metonym for the type of animal from which it came (and also as a material anchor for the conception of that animal), and the characteristics of that animal are blended with other elements of that person's identity. An identity thus established is meant to be carried across frames, so that the person is seen in light of that animal or event regardless of the situation in which he or she is found.

Brück (2004: 321) provides an insightful analysis of how objects might be used to express relationships between people and the places that were important in their lives. She describes the inhumation burial of a Bronze Age woman from North Yorkshire, England:

> Lying close together in front of the waist was a selection of
> objects including three bronze awls, a jet bead, a boar's
> tusk, a beaver's tooth, three cowrie shells and fragments of
> fossil belemnite. As metonymic referents to locations that
> had been important to this individual during her life, these
> objects documented her lifecourse in material form,
> identifying and drawing together the places that had made
> her what she was.

From a blending perspective, each of these objects would bring to mind a mental space, or series of mental spaces, involving actions and locations of importance, all of which would be inputs to the remembered identity of the woman.

ii. Identity and the "Container" Image Schema

Earlier in this dissertation (see p. 17) we considered Lakoff and Johnson's notion of image schemas, and how image schemas might be central to the creation of primary metaphors and more generally to our comprehension of our physical, bodily engagement with the world. An image schema, we saw, is "a recurring, dynamic pattern of our

perceptual interactions and motor programs that givens coherence and structure to our experienceö (Johnson 1987: xiv).

One important image schema is that of õcontainer.ö Containers are central to human activity because they define our concept of õin.ö For speakers of English, the concept of õinö is defined by a container image schema that consists generically of three parts: (1) a boundary, which demarcates (2) an interior (3) from an exterior (Johnson 2007: 141). So when we say õthe car is in the garage,ö we are understanding a bounded space with an interior, in which the car can be found. õIn,ö in turn, defines õout.ö

The container image schema, like other image schemas, can be extended from the physical world to the abstract, non-physical world. For example, consider the following statement (Johnson 1987: 34): õTell me your story again, but leave *out* the minor details.ö In that statement, the story event is being understood as a container, from which minor details can be removed. Similarly, in the statement õI give up, Iøm getting *out* of the race,ö the race event is being understood as a container, from which a person can remove herself. Johnson (1987: 34) summarizes this use of the physical õcontainerö for non-physical concepts:

> The OUT schema, which applies prototypically to spatial orientation, is metaphorically projected onto the cognitive domain where there are processes of choosing, rejecting, separating, differentiating abstract objects, and so forth. Numerous cases, such as *leave out, pick out, take out,* etc., can be either physical bodily actions that involve orientational schemata, or else they can be metaphorically oriented mental actions.

In the same manner, through metaphorical projection, social or interpersonal obligations or contracts can be seen as bounded entities, as in the following examples (Johnson 1987: 35):

> õDonøt you dare back *out* of our agreement,ö or
>
> õIf you want out, bow *out* now, before we go any further.ö

Johnson (1987: 35) notes that õbeing bound in these cases involves something metaphorically akin to being in a physical space where forces act on and constrain you.ö Another example, one closely connected to the notion of identity, is the attempt to õget outside yourselfö in order to see yourself more objectively (Lakoff and Johnson 1999: 277). This too involves the õcontainerö image schema.

I contend that people understand human identity in a similar fashion, that is, they see the human body as a õcontainerö for the identity of a person. Identity, an abstract concept, is understood through the metaphorical projection of the image schema of õcontainer,ö such that a personøs identity is *contained* in their body (Sweetser 2004). The body is the physical manifestation of that identity or, stated in blending terms, the body is the *material anchor* for the complex blend of mental spaces that creates oneøs identity.

We might say to someone: "I know the inner you," or "on the inside, he's not such a bad guy," signifying that the elements of his character are contained within some enclosure.

The identity "container" does not, however, consist merely of an inside and an outside. The surface of the container can also be utilized in the formation or expression of identity, as is the case with jewelry, pendants, tattoos, or scars. We can add elements to our identities through the use of these temporary or permanent modifications. This notion of the body as a container of identity may be the point at which the cognitive theories of metaphor and blending intersect with modern approaches to the archaeology of the body (Joyce 2005).

One scholar who has recently utilized the concept of "container" in connection with human identity is Clive Gamble, an archaeologist who consistently thinks "outside the box" and is quite willing to take novel approaches to reinterpret archaeological problems. In his 2007 work *Origins and Revolutions, Human Identity in Earliest Prehistory* (Gamble 2007), Gamble discusses "instruments" and "containers" as being metaphors of "great antiquity" that are referenced to the body. Although it is beyond the scope of the discussion here to offer a critique of Gamble's book, a few comments might serve to distinguish the approach he advocates from the use of metaphor and blending theory in this dissertation.

Gamble goes to great lengths to de-emphasize the role of the human brain in human cognition. He seeks to differentiate his approach from a Cartesian view of the primacy of the mind, and ends up attributing great importance to the actions of the body, as when he writes: "Brains do not tell the feet what to do. Indeed our toes are as en-minded as our brains are em-bodied" (Gamble 2007: 103). This point is important for Gamble because he argues that much of human cultural meaning predates the development of language:

> Instruments and containers have great antiquity and have always been referenced to the body. Therefore, cultural meaning has no origin point among the hominins. Material metaphors that understand the world in terms of experience have always been a consequence of hominin bodies inhabiting space and time (Gamble 2007: 110).

It is telling that in his depiction of metaphors no brain is involved, as in the statement above that "material metaphors *that understand the world. . . .*" Contrary to Gamble's argument, metaphors do not understand the world at all; rather, *humans* understand the world in part *through metaphors*. This perspective is consistent with Gamble's (1999) earlier work in which human social networks were analyzed without reference to the human mind or its capabilities.

While I agree wholeheartedly with the notion of embodiment (see above), and certainly do not seek to eliminate from consideration the role that the entire body plays in human apprehension of the world, I suggest it is a mistake to equate all of the parts of the human body and to pretend that they have similar functions and therefore similar roles in human cultural development. Toes do perform a different function than brains. Toes perform a different function than hands. The metaphorical projection of the physical act of grasping, as in "I couldn't *grasp* what the Professor was saying," is a consequence of

the utilization of the human hand, not the human foot.   Humans had to evolve the raw cognitive ability to think symbolically ó and this was a consequence of the development of the *brain*, not the *toes* ó before they could begin to engage in õmodern human behavior,ö however defined. While today it seems obligatory in the social sciences to genuflect at the shrine of anti-Cartesianism, we should not let our religious fervor blind us to the importance of the evolution and function of the human brain. Johnson (2007: 155) expressed this concisely:

> In order to have human meaning, you need a human brain,
> operating in a living human body, continually interacting
> with a human environment that is at once physical, social,
> and cultural. Take away any one of these three dimensions,
> and you lose the possibility of meaning: no brain, no
> meaning; no body, no meaning; no environment, no
> meaning. Although the brain alone cannot give us
> meaning, it is surely the supreme bodily organ in the
> construction of meaning.

I would argue, contrary to Gamble, that there was a time in human evolution when hominins could engage in the bodily activities that gave rise to image schemas, yet could not project those image schemas metaphorically to understand one thing in terms of another. In other words, metaphors did not exist merely because the physical activities on which they were based were being undertaken. Metaphors often (though not always) have a physical basis, but they do not exist independent of the human mind. Similarly, there was a time when hominins could engage in simpler forms of conceptual blending but could not engage in double-scope conceptual blending. The theory of image schemas, as distinguished from metaphors, is critical to the understanding of hominin experience prior to the ability to think metaphorically or engage in blending, and perhaps it is the absence of image schemas from Gambleøs theory, together with his virtual negation of the importance of the human mind, that separates his approach from what I am proposing here.

In summary, human identity can be viewed from the perspective of conceptual integration and metaphor as a blend of multiple mental spaces, all of which together form the single yet divisible identity of a person. That identity can remain consistent across frames, that is, as someone is viewed in varying contexts. Identity can also be understood as a container with an interior, exterior and surface. These points are central to the discussion that follows, in which I consider the notion of identity in the context of the contact of cultures.

(b) Culture Contact

i. Introduction

In the preceding section I briefly outlined how blending and metaphor theory might be applicable to issues of human identity generally. I would next like to apply that perspective on identity to the European Ice Age.

One aspect of life during the European Ice Age that might be a promising subject for the application of blending theory is the interaction of modern humans and Neandertals. Since that interaction was a contact of different cultures, I would like to view it in light of modern theories of õculture contact.ö

Studies of culture contact have õassumed a recognizable placeö in contemporary archaeology (Silliman 2005), and much analysis has been performed with regard to culture contact situations during the last few hundred years and in connection with the empires of a few thousand years ago. By contrast, there has been no systematic attempt to apply concepts generated by modern culture contact studies to the European Ice Age, or more specifically to the Neandertal ó modern human transition that took place between roughly 40,000 and 27,000 B.P. An uncritical application of culture contact research to the European Ice Age could produce very misleading results, since the demographic, material, economic and social aspects of life during the Ice Age were so different from the situations that have been the focus of inquiry to date. In this section of the dissertation I seek to summarize some of the literature and concepts of modern culture contact archaeology ó those that are most pertinent to studies of the Ice Age ó before utilizing them in a discussion of identity and the Châtelperronian industry.

ii. Acculturation and Trait Lists

Modern discussions of culture contact are conducted with reference to prior theories, and in particular the concept of õacculturation.ö The term õacculturationö was used as early as 1880 (Herskovits 1938: 3). One often-cited early formulation was Redfield et al.øs (1936) article in the American Anthropologist. There, acculturation was defined as follows:

> Acculturation comprehends those phenomena which result
> when groups of individuals having different cultures come
> into continuous first-hand contact, with subsequent changes
> in the original cultural patterns of either or both groups.

Those authors provided an outline for the study of acculturation, covering matters such as trait analysis and the psychological aspects of the process. That 1936 formulation became the reference point for many later analyses, both supportive and critical.

A key criticism of the concept of acculturation as employed in Native American and European entanglements is that it stemmed from õa segregated view of the pastö (Lightfoot 1995: 206). Lightfoot states that:

> Culture change, or acculturation, was viewed as the
> assimilation of native peoples into the material world of
> Europeans or European Americans, a process that involved
> their rejection of traditional lifeways and the adoption of
> European artifacts through force or choice.

At the same time, we should recognize that the early formulations did to some extent address the issues considered important today. For example, in the section of the 1936

outline dealing with õthe results of acculturation,ö Redfield et al. (1936: 152) recognize the possibility of resistance when they note that acculturation can cause a reaction õwhere because of oppression, or because of the unforeseen results of the acceptance of foreign traits, contra-acculturative movements arise . . . .ö As Cusick (1998: 128) notes, õa common objection to acculturative approaches to culture contact is that they ignore power relations . . . In fact, this is not entirely true.ö

In archaeology, a spin-off of the segregated, acculturation view of the past has been the use of trait lists. Artifacts found in contact situations have been divided into types and categorized depending on the materials ó native or European ó from which they were made (see, e.g. Quimby and Spoehr 1951). On the assumption that native residences and settlements were distinct from those of õotherö peoples, artifact trait lists were used to quantify the ratio of native and European materials in archaeological deposits (see Lightfoot 1995: 206; see also articles cited therein). It followed, according to this logic, that õthe greater the percentage of European goods in Native American contexts (houses, work areas, middens), then the greater the degree of acculturation.ö

This trait list approach has been used in the archaeology of the Neandertal-modern human transition. For example, a debate has arisen over whether the material culture of the Châtelperronian Neandertals can be understood as Neandertals õacculturatingö to the incoming modern humans, and Châtelperronian stone tools and ornaments have been studied to determine what features they have in common with either traditional Neandertal (Mousterian) artifacts and the artifacts associated with modern humans (see, e.g., d'Errico, et al. 1998).

The lure of trait lists is understandable. Material culture is what archaeologists find (or at least hope to find) when they excavate. Archaeologists are trained to detect differences in artifacts, to compare and to classify them. This process appears seductively objective and õtheory-free.ö

But the trait list approach is not as straightforward as it might first appear. Lightfoot (1995: 206) notes that in the study of historic contacts in North America:

> Artifact ratios may actually mislead researchers into underrepresenting the direction and degree of culture change in multi-ethnic communities. In some cases, European artifacts ó specifically produced for native consumption ó functioned as direct replacements for native artifact forms with no apparent transformation taking place in other aspects of traditional native culture.

In other instances, European goods were used in new ways in native contexts.

Bragdonøs study of the Christian Indians of New England illustrates Lightfootøs position and offers a cautionary note for archaeologists who wish to see the archaeological record as a clear reflection of the process of acculturation. Her comparison of historic Native Americans living on the mainland of Massachusetts and those living on the offshore islands (e.g. Nantucket) shows that the archaeological record may *not* be an accurate reflection of cultural changes. While the material culture of the island Indians changed more rapidly toward that of the white settlers, the island Indians held on to their own language and political organization for a longer period of time (Bragdon 1988: 131).

iii. Culture Contact and the Creation of Material Culture

In culture contact situations, the archaeological record may be transformed because goods are exchanged between groups of people, and because people begin to make different goods, or make the same goods differently, as the result of contact. In culture contact situations goods might be exchanged at the very first meeting between people of different cultures (Lightfoot and Simmons 1998). Alternatively, goods can also move into a culture through long-distance exchange networks or through the scavenging of items, e.g. from shipwrecks (Lightfoot and Simmons 1998: 158).

Material culture is a medium for expressing, affirming and contesting social values and world views (Harrison 2002: 372). This is particularly true in culture contact õzones,ö where objects are used proactively and are a reflection of the tensions and negotiations that are taking place (Jordan and Schrire 2002: 242). õArtifacts are not merely products but also instruments used by actors in the social systemö (Jordan and Schrire 2002: 241). Material culture is not simply õa passive product of economic behavior,ö but rather õan instrumental component of symbolic actionsö (Beaudry, et al. 1991: 174).

One important feature of culture contact is the development of new styles of material culture. While it is not surprising that people living at or near a õfrontierö or õcontact zoneö would begin to blend traditions, the many forms this process can take is intriguing. Bragdon (1988: 128) summarized the situation succinctly:

> The increasing sophistication of our understanding of the nature of cultural contact and change calls in turn for a reevaluation of the ways in which artifactual remains reflect cultural change in other aspects of native society. The concept of acculturation, or transculturation, that posits a progressive departure of a subordinate cultural group from traditional ways in favor of those of a dominant culture with which it has come into contact, has long since been abandoned in favor of a more sophisticated way of understanding cultural change; one which focuses instead on the *creative reworking of new concepts, objects, and practices by both groups in contact*, a process occurring whenever groups come together, regardless of their original similarities and differences. At the same time, we have become increasingly aware of the ways in which dominated or oppressed groups within a larger society, such as the Christian Indians, manipulate symbols, both tangible and intangible, in order to preserve and maintain distinctiveness as individuals and groups. (emphasis added)

Fort Ross, a Russian outpost in northern California, provides an example of the creation of new lifeways taking place simultaneously with attempts to retain traditions. Lightfoot et al. (1998: 212) note that at Fort Ross, interethnic households began to serve a new menu that was not derived solely from one group or the other. At the same time, there were attempts by Native Californian women and Native Alaskan men to maintain their own distinct social identities and spaces in interethnic households (Lightfoot, et al. 1998: 215).

E.S. Lohseøs article õTrade Goodsö provides a good overview of the development of new forms of material culture as a result of the contact between Europeans and Native

Americans in North America. Lohse describes how Native Americans adopted European trade goods, both those that had functional advantages over the comparable native objects and those that did not. The Native Americans utilized new types of goods, but did so in the context of pre-existing Native American designs and styles. For example, "cloth for dresses was cut and sewn in traditional fashions that derived from the use of animal skins" (Lohse 1988: 397). Lohse (1988: 401) argues that Native Americans adapted White materials to uses that had direct analogues in traditional material culture. Acceptance of articles of White manufacture did not indicate a complete rejection of the native lifeways, but rather showed an appreciation of "the different, the exotic, the useful" (Lohse 1988: 397, 402).

Similarly, Diana Loren analyzed the interaction between certain native groups and French settlers in the Lower Mississippi Valley during the 18th century. She argues that "dress and the body were key aspects of colonial discourse (Loren 2001: 175). Many Native Americans donned French dress styles, Loren argues, so that they could "move more freely through different social and economic landscapes" (Loren 2001: 180-181, 184). Archaeological evidence suggests that there was mixing of dress styles among the native group the Bayogoula; this mixing could have "communicated newly emerging social identities" (Loren 2001: 184). French settlers also began to mix clothing styles (Loren 2001: 183-184).

Items that are incorporated into a culture may be used in circumstances that differ from their original use. For example, porcelains and iron spikes scavenged by the Coast Miwok from a Manila galleon shipwreck in the late 1500s in California were likely used not for their obvious functional purposes but rather were incorporated as symbolic references in native cosmology (Lightfoot and Simmons 1998: 159). Ceramics and pipes found in the remains of Bahamian plantations arguably show that African-based aesthetics directed the selection and composition of the artifacts obtained in local markets or from plantation owners (Wilkie 2000).

iv. Culture Contact and Identity Formation and Retention

People are constantly classifying others and assessing their motives and intentions. This reading of objects, gestures and postures has been referred to as "appearential ordering," a name which indicates both the ordering process that is taking place and the surficial evidence that is being used (Lofland 1973). Material items are active symbols in broadcasting and even negotiating a person's identity. They distinguish group members from "others" (Lightfoot and Martinez 1995: 485). Spicer notes that: "A sense of identity depends not only on a distinction made by the group possessing it, but also on distinctions made by other groups excluded from the identification" (see also Beaudry, et al. 1991; Spicer 1962: 579). For that reason, the retention or modernization of cultural traits is critical in culture contact situations (Lightfoot and Martinez 1995: 485).

For example, in his study of Southwest American native tribes, Spicer notes that certain elements of traditional culture took on added significance in connection with that tribe's relationships both with other tribes and with the "dominant society," which included Spanish, Mexican and American colonials over time. Items such as headbands, dresses, hairdress, songs and dances became symbols of group solidarity (Spicer 1962: 578-579).

In the late 1970s and early 1980s, archaeologists continued the long-standing interest in the study of "style" in artifacts, and in particular how style might be used in connection with identity (Conkey 1978; see, e.g., Wobst 1977). In the early 1980s, Polly Wiessner attempted to analyze Kalahari San projectile points in light of style and the transmission of social information.

Wiessner (1983: 257) saw style as one method by which people project their identities to others. She defined "style" as "formal variation in material culture that transmits information about personal and social identity" (Wiessner 1983: 256). Wiessner distinguished "emblemic style" from "assertive style." The former, in her view, was "formal variation in material culture that has a distinct referent and transmits a clear message to a defined target population about conscious affiliation or identity, such as an emblem or a flag" (Wiessner 1983: 257). She defined "assertive style" as "formal variation in material culture which is personally based and which carries information supporting individual identity, by separating persons from similar others as well as by giving personal translations of membership in various groups" (Wiessner 1983: 258). Assertive style has no distinct referent. According to Wiessner (1983: 259), although the dividing line between the two types of style can be "a thin one," in principle it should be possible to distinguish them in the archaeological record.

In 1985 James Sackett exchanged views with Wiessner on this topic. Sackett argued that isochrestism, the idea that people select certain styles from many alternatives and then adhere to them, is the basic source of ethnic style in material culture. He contended that Wiessner mistakenly considered style to be largely "iconological" (i.e. purposefully created) when in fact iconicism is a special case and should not be considered the norm (Sackett 1985). Wiessner, in turn, rejected Sackett's model of iconological style as covering only a special case of stylistic behavior.

In a more recent study of identity and material culture, Rodney Harrison studied lithic and glass point manufacturing in colonial Australia (1788 to the present), and specifically the creation of "Kimberly points." These blades may not have existed prior to the arrival of the European settlers. Rather, Native Australians developed these points into their current shape at the same time the blades were being replaced by modern substitutes (Harrison 2002: 358). Harrison (2002: 368) argues that Native men, with traditional hunting lifeways no longer possible, needed to find a new way to express their self-worth and to develop a sense of masculine identity that was not tied to hunting. He asks whether the blades were symbolic of the male hunting pursuit, summarizing his argument as follows:

> The act of production of Kimberley points is linked directly to the creation of ethnicity with regard to both settlers and other Aboriginal people. Kimberley men were Kimberley men in part simply because they could make Kimberley points. The manufacture of Kimberley points is not only an acknowledgement of the maker's masculinity (as a privilege of having gone through various stages of initiation), but of their identity as a member of a particular ethnic group. By manufacturing points in glass, Kimberley men were realizing the symbols for a new, hybrid social system with clear links to the traditional (Harrison 2002: 372).

Silliman's study of the Petaluma Adobe, a Mexican rancho in northern California, raises similar issues. An intriguing issue at that site was why native people continued to make and use stone tools despite the availability of more modern materials. He argues that these lithic practices were part of the daily "negotiation of colonialism," and that "these stone artifacts were conscripted as active materializations, rather than passive vestiges, of native identity" (Silliman 2001). He suggests that some people may have consciously chosen this material "to activate or solidify a nineteenth-century identity."

Bamforth (1993: 68-69) studied the adoption of metal (in the place of stone) tools at the Helo' site near Santa Barbara, finding that metal tools replaced certain types (but not all types) of stone tools. For example, the local Chumash Indians adopted metal for their woodworking tools (although unmodified flakes were still used in woodworking), but continued to use stone tools for fishhook production.

Wilkie and Farnsworth (1999) studied identity formation on Bahamian plantations, stressing its fluidity. They focused on ceramic data, noting that slaves used ceramics to create and reinforce an identity that was separate from that of the planters.

Identity formation can also be studied through spatial organization of daily practices. Lightfoot et al. (1998) carried out such a study at Fort Ross, focusing on issues such as the layout of neighborhoods at the settlement, concepts of orderliness, and menu choices.

One final idea relevant to a discussion of culture contact and identity is the notion of "hybridity." Van Dommelen (1997) has criticized the "dualist conception of colonialism," which "represents colonial situations as a confrontation between two essentially distinct entities, each of which is internally homogeneous and externally bounded." He suggests instead that such situations are "ambiguous" and "murky." They involve hybridity, a reworking of various elements of identity by subgroups (e.g. social, economic or ethnic subgroups) of those entities, rather than the combination of two complete cultures. That reworking occurs through social practice and can be discerned in the archaeological record.

(c)   Application of These Concepts to Ice Age Europe.

i. Introduction

The application of culture contact theories to Paleolithic Europe is far from straightforward. Although concepts of "culture contact" apply to more than just the process of colonization, much of the work in culture contact has been done in the context of the creation of colonies, such as the Native American – European contact in North America or the earlier empires of western civilization such as the Greeks and Romans. However, the social situation in Ice Age Europe does not directly correspond to those colonial periods, and that comparison can be misleading (Graves 1991). As Gamble (1999: 269) has stated:

The encounters between Cro-Magnons and Neanderthals were not equivalent to the colonial confrontation between Europeans and Indigenous peoples. There was no Upper Palaeolithic empire; there was

no shocking disparity in fire power. There were no relevant institutions to frame such a contest.[15]

In addition, many theories of culture contact have been developed in analyses of Western capitalist expansion, and it is questionable whether those theories can be neatly applied to pre-capitalist societies. For that reason, approaches such as õworld systemsö with its concepts of õcoreö and õperipheryö appear to have little relevance to Ice Age Europe (even those who seek to use modified õworld systemö approaches do not argue that their approaches are applicable to nomadic or hunter/gatherer societies) (Stein 1999).

ii. Limitations of the Archaeological Record

Before comparing modern or more recent contact or colonial situations to the situation in Europe 30,000 years ago, it is helpful to recognize the limitations of the archaeological record with respect to the European Middle and Upper Paleolithic, since those limitations directly affect the quality of the conclusions we are able to draw. First, there is of course no historical record ó no documents or oral accounts ó of life in the Paleolithic. Historical documents can provide critical information in the assessment of more modern contact situations, but with regard to the Paleolithic, we are left with only the extremely durable artifacts that we find in the earth.

Second, the accuracy of dating techniques in the 30,000 to 40,000 B.P. time period is questionable (Bard, et al. 2004; Beck, et al. 2001; Hughen, et al. 2004; Jöris and Adler 2008). This means that in the future we could see a radical revision of the dates associated with Paleolithic artifacts and imagery, and it could turn out that some of the artifacts that are currently considered õevidence of contactö between different peoples could turn out to have been created by one group or the other, without any contact (d'Errico, et al. 1998; Mellars 1999).

Third, we are still not certain who created some of the artifacts that are key to this discussion. For example, until recently it had been assumed that modern humans created the õAurignacianö artifacts in the well-known Vogelherd cave of Southern Germany, with that assumption resting in part on the association of those artifacts with what was presumed to be an early modern human cranium. The recent dating of that cranium to the Neolithic complicates the picture, both because the cranium is far too recent and because the location of the cranium in the deeper layers of cave sediment suggests that those layers may have been mixed (Conard, et al. 2004). In a larger sense, the easy assumption that types of artifacts equate to people or cultures is not necessarily true.

iii. Differences Between Paleolithic and Modern Culture Contact

One critical difference between then and now is the size of Ice Age hunter-gatherer living groups and those groupsø mobility. Both Neandertals and modern humans in Ice Age Europe lived in relatively small bands of mobile hunter-gatherers. In such a situation, the concept of õfrontierö may take on a different meaning. Unfortunately we do not yet have any secure understandings of population densities such that we might be able to infer the probabilities of differing groups coming into contact, especially without

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[15] Gambleøs use of the metaphor õcontestö is itself interesting.

prior planning. The latter is certainly assumed for the Upper Paleolithic and there are numerous sites that have been interpreted as aggregation sites (see, e.g., Conkey 1980), and the long distance movements of various kinds of materials (e.g., specific chert types or shells) attest that groups did move and yet also connected. Further, with low population densities, reproductive viability of human groups most likely entailed group contact and interactions.

A second important difference between the European Ice Age and modern contact (or more properly: colonial) situations is that, as Gamble notes, we have no evidence of a substantial disparity of power between the Neandertals and the modern humans. Nor do we have information that there were any social institutions (such as established religions) that might have played a role in the domination of one group by the other. The fact that these groups of people lived in some kind of proximity to each other for perhaps as long as 10,000 years suggests that neither group had the ability totally to dominate or eliminate the other. In culture contact parlance, this would be a õnon-directedö encounter (Wagner 1998: 431).

Third, we should bear in mind that there could have been cognitive differences between the groups in contact. While culture contact in recent centuries has involved members of the same species with equal cognitive abilities, in Ice Age Europe we may be dealing with contact between people of different species or sub-species with different cognitive abilities. Neandertal origins and cognitive abilities are still the subject of great dispute (see, e.g., d'Errico and Henshilwood 2003), but genetic evidence suggests that Neandertals split from the rest of the genus Homo between 365,000 and 853,000 years ago (Krings, et al. 1999; Ovchinnikov, et al. 2000), arguably a sufficient period for biological differences to appear, notwithstanding later genetic admixture (Green 2010).

iv. The Utility of Culture Contact Theories

Despite the limitations of the archaeological record from the Ice Age and the differences between the two time periods in question, in my opinion the methods and concepts of culture contact studies can be utilized in studying Ice Age Europe. I suggest the following:

> **Frontiers**: Abandon the notion of fixed õfrontiers,ö and replace it with Gambleøs (1999) concept of õlandscape of habitö. Gamble defines a õlandscape of habitö as õthe wider region, traversed by the individual and all those with whom he or she interacts.ö It forms a õspatial network of intersecting pathsö (Gamble 1999: 87), and therefore structures social relations. It emphasizes õhow the everyday routines which are performed at locales also have a temporal sequence that structures the contexts of interaction. This continuous process involves interactions between individuals where negotiation is achieved through display, gesticulation, grooming, language, performance, sign and symbol. In other words, the routinization of life. . . .ö Therefore, rather than conceiving of Ice Age culture contact as occurring along frontiers, we might picture it as affecting mobile groups of people in overlapping areas through which people move in their daily lives of hunting and foraging. This approach would more accurately reflect Paleolithic lifeways, and would allow us to draw in some of the evidence that we

do have for the Paleolithic, data such as that pertaining to raw material transfers. Moreover, from this perspective contact and negotiation between people is seen as integral to normal routines, rather than being something unusual.

➢ **Networks:** Adopt a Network-Based Approach**.** Gamble (1999: Chapter 8) has applied a network-based analysis to Neandertal and modern human societies during the Middle and Upper Paleolithic. He contrasts Neandertal society, which he contends was founded on intimate networks, with the Upper Paleolithic õextension of social life,ö õstretching of social relations,ö and õrelease from our primate heritage of proximity.ö If so, then the Upper Paleolithic was a time of profound social change, and it involved two types of people with vastly different conceptions of space and social relations. Culture contact in this period must be viewed in the context of these changes and differences.

➢ **Fungible Cavemen**: Abandon the Idea that All Neandertals and All modern humans Were the Same. There is a tendency to assume that the Neandertals formed a single group of people, and the incoming modern humans similarly formed a single population. Thus, õNeandertalsö can be compared to õmodern humans,ö one culture with another. In fact, it is difficult to conceive of widely dispersed Neandertal or modern human hunter-gatherers sharing the same language and culture.

➢ **Artifacts:** Abandon õAcculturation.ö   To date Neandertal ó modern human Transition artifact studies have been approached from an outdated õacculturationö point of view, even though those undertaking these studies recognize the difficulties with that term (d'Errico, et al. 1998). For example, Châtelperronian artifacts have been studied simply with an eye toward identifying the origins of their various traits, the goal being to determine the extent of modern human influence. Instead, we should reanalyze Ice Age evidence of culture contact utilizing the concepts of modern culture contact studies, that is, in light of the complexity of the reactions of those in the cultures in contact, and apply those concepts to the artifacts of the Mousterian, Châtelperronian, and Aurignacian cultures. We know that the adoption of traits may not signify what we initially think it does; though it may demonstrate contact with other people it may not show an actual õacculturationö to the culture of those new people.

➢ **Selection of Analogies:** It may be that certain portions of a modern contact period might be more pertinent to the Ice Age than others. For example, the initial exchanges between Captain Cook and the Hawaiians, when there was no overriding dominance, might be a closer analogy than later periods when the Americans and Europeans were more entrenched (Sahlins 1985). Similarly, early fur trading interactions between Native Americans and Europeans, prior to more formalized contact driven by institutionalized capitalist enterprises (Wagner 1998), might be more easily analogized to the Upper Paleolithic than those later periods. And we need not limit ourselves to consideration of contact with Europeans, but rather could explore ethnographic research from around the world.

(d)   Culture Contact from the Perspective of Conceptual Blending

The classic conceptual blending analysis, in which there are two mental spaces and a blend that has received some elements from each of those inputs, is well suited to the study of culture contact; it õfitsö the evidence. Not all of the elements of each input are projected into the blend. The blend, once constructed, can be elaborated upon and used for the creation of further blends. Similarly, culture contact settings typically involve two cultures mixing, with elements of each culture (but not all aspects of each culture) being adopted in the mixed culture that results from that contact. The new blended culture can exist as a unique blend, and people elaborate that blend through their daily practices.

As a simplistic example, if we apply this type of analysis to a culture contact setting from historic times, the interaction of Native Americans and French settlers in Louisiana in the early 1800s described by Loren (see above at p. 144), we might create a blending diagram something like the following:
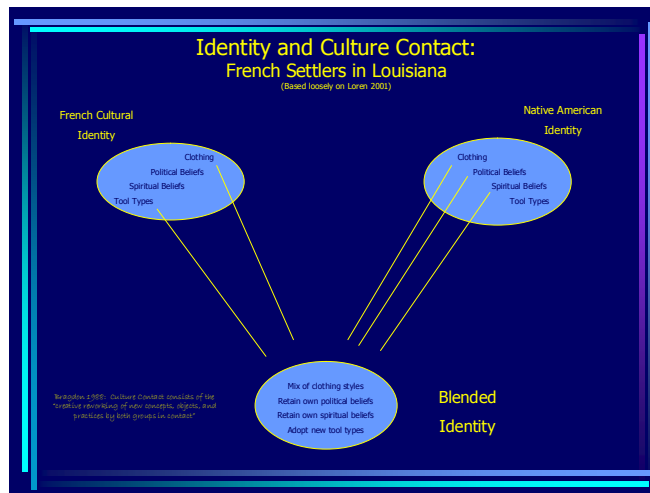
Figure 48.
Identity and Culture Contact: French Settlers

(e)   Blending, Metaphor and the Interaction of Neandertals and modern humans

Reaching farther back into time, a simple diagram of the Châtelperronian, depicting the mixing of Neandertal and anatomically modern human cultures (as inferred from the archaeological record) might look something like this:
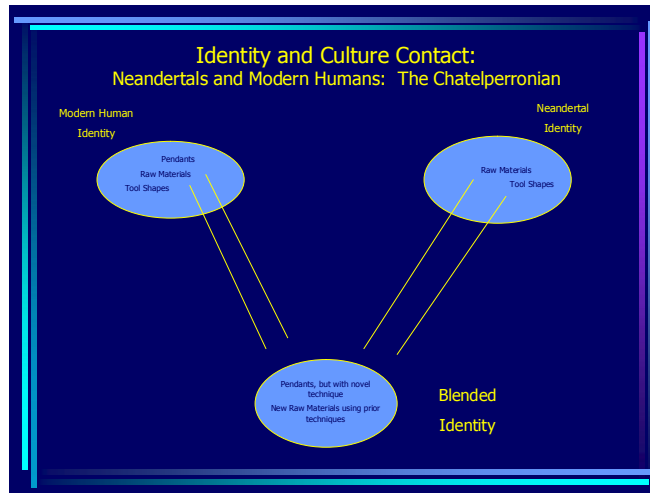
Figure 49.
Identity and Culture Contact: The Châtelperronian

Here too we see the selective projection of some elements of each input space, but not others.

But perhaps what is more important for our analysis here is what these simple diagrams do not show: the *frames* that structure each of the input spaces and the blended space. With a focus on frames, a blending diagram of the Paleolithic raises interesting questions about Neandertal and modern human cognition. This is because what we posit about the frames used by those peoples, and in particular the Neandertals, demonstrates different assumptions about their cognitive abil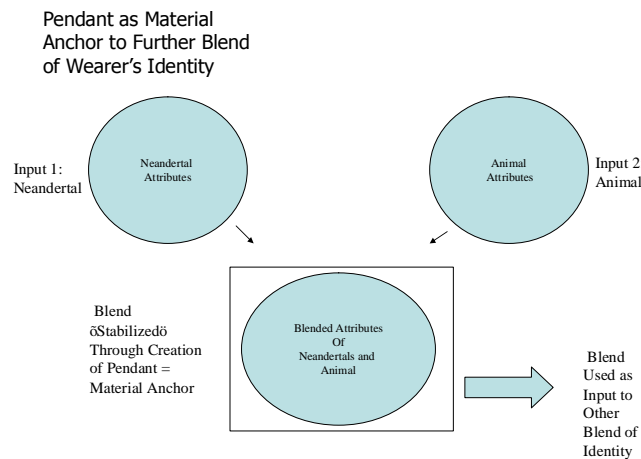ities. The focus of the discussion that follows will be on frames; I suggest that by focusing on frames we can find some value in approaching the Châtelperronian from the perspective of conceptual blending.

It is helpful to begin by looking at how the theory of conceptual blending would view the Châtelperronian, if Neandertals *did* have strong symbolic abilities. This is the opposite of what is commonly assumed, namely, that Neandertals *did not* have the ability to think symbolically. Beginning with the scenario of symbol-using Neandertals provides a baseline, a template against which the majority view can be judged, lending some perspective to the discussion. I feel it is most worthwhile to focus on materials such as the animal tooth pendants that form part of the Châtelperronian assemblage at Arcy-sur-Cure, rather than unique Châtelperronian stone tool types, because pendants have no obvious õfunctionalö use and therefore more directly implicate issues of symbolism. For the purposes of this dissertation and its examination of culture contact, I will assume that the Châtelperronian artifacts were created by Neandertals after contact with modern humans.

At the site of Arcy, researchers found grooved hyena and fox canines, as well as grooved incisors of a bovid and reindeer (d'Errico, et al. 1998). Since we do not know in what way these objects were meaningful to the Neandertals who created them, for the sake of this discussion I assume that such objects were intended by the Neandertals to augment their identities by drawing a connection between the attributes of the animal from which the teeth were obtained, and those of the wearer of the pendants. This would

be an example of augmenting one's identity, and can be viewed either (through the lens of metaphor theory) as utilizing the animal as the *source domain* for a metaphorical mapping of attributes to the person who is the *target domain*, or alternatively (from the perspective of blending theory) to *integrate* the animal with the person to create a human identity that contains elements or attributes of the animal.

Since we are hypothesizing that Neandertals learned from modern humans how to draw this connection/create this blend, by definition the modern humans themselves would first have had to create a similar blend (of themselves and of some animal) in their own minds. Then, upon contact, the Neandertals would have had to gain an understanding of the modern humans' conceptual blend, and the Neandertals would have had to attempt to replicate that blend. This Neandertal replicated blend would have had, as one input space, Neandertal attributes, and as the other input space, the attributes of the animal. The blend resulting from those two input spaces would be a combination of certain elements of the Neandertals and certain elements of the animal. That blend would be represented by the pendant; the pendant would become a material anchor for the blend. That blend would in turn be an input to another blend, that of the identity of the Neandertal wearing the pendant. We might schematically represent this series of blends in the following diagram:

Pendant as Material Anchor to Further Blend of Wearer's Identity

Input 1: Neandertal

Neandertal Attributes

Animal Attributes

Input 2: Animal

Blend "Stabilized" Through Creation of Pendant = Material Anchor

Blended Attributes Of Neandertals and Animal

Blend Used as Input to Other Blend of Identity

Figure 50.
Châtelperronian Pendant: Material Anchor and Input

From the point of view of blending theory, there are a number of things that are necessary in order for this to occur. First, the Neandertal would need to possess a frame of "Neandertal attributes" that structures Input 1, i.e. an understanding of what it means to be a Neandertal, what they are like, what they do, what they don't do, what they believe. In order to have such a view of her people, she would need to be able mentally to place herself outside of Neandertal society and see Neandertals as an entity apart from

herself. That ability in turn implies a fairly sophisticated sense of consciousness (Damasio 1999) and perhaps a Theory of Mind.

Second, this Neandertal would need to be able to construct a frame for the animal in Input 2. She would need to have an understanding of the animal, its attributes, and its behavior.

Third, our Neandertal would need to have the ability to perform double-scope conceptual blending (DSCB). The example above involves DSCB, as opposed to simpler forms of blending, because we are hypothesizing that the two input spaces have different frames and that the blend is structured by a combination of the two frames. The ability to perform blending, and in particular DSCB, in turn implies that our Neandertal has the underlying ability to create symbolic representations and abstractions, for this is how input spaces are created (Deacon 2006).

Fourth, since the conceptual blend exists in the embodied mind of our Neandertal, her creation of a material object to represent that blend further underscores her ability to represent concepts symbolically. She needs to have the ability to comprehend, albeit perhaps subconsciously, that the object ó such as an incised fox canine ó stands in the place of or represents the conceptual blend.

Fifth, the use of this materially anchored double-scope blend, as an input to a larger blend of mental spaces that define her personal identity, also requires the ability to engage in conceptual blending on a complex level. It may also require a significant amount of working memory (Coolidge and Wynn 2009) in order to hold these frames, input spaces, and blends in memory long enough to engage in the identity blend.

To summarize, if the Neandertals did copy the use of pendants from the modern humans, and if they *actually understood* in the same way the symbolic aspects of what the modern humans were doing and then replicated those symbolic aspects, this would mean that the Neandertals had to be capable of double-scope conceptual blending and symbolic representation, and that they had to have a fairly developed sense of consciousness. This would contradict the common understanding of Neandertal cognitive capacity, and would be what those archaeologists who are promoters of Neandertal cognitive abilities have been arguing for.

We can contrast that situation with the more common view, that Neandertals *mimicked* the jewelry of the modern humans *without any true symbolic understanding* and without therefore having any real understanding of what that jewelry meant to the modern humans. How would blending view that situation? What mental operations were involved there? The answer depends on exactly what the Neandertals were trying to accomplish by copying these pendant styles.

A scenario would be as follows: Neandertals have been living in Europe for thousands of years, and after modern humans begin to move into Europe the two groups come into contact with each other from time to time, in some locales. The modern humans, having a rich symbolic life, sometimes wear animal tooth pendants around their necks, and the Neandertals notice this. Given their detailed knowledge of the fauna that surround them, the Neandertals can identify the animals from which these tooth-pendants were made. Grooving the teeth and then suspending them, this is something the Neandertals had not seen before and they are somewhat mystified, not sure why someone would choose to do this. The Neandertals then spend time in the õGrotte Renneö at Arcy-sur-Cure, recreating these animal tooth pendants.

The first question is: why? There are a number of possibilities. One possibility is that they were engaged in some sort of trade with the modern humans, knew that the modern humans desired such objects, and decided to make these objects in order to trade them with the modern humans. The Neandertals would not need to have any comprehension of the objects as symbolic referents in order to do this. A second possibility is that they simply wanted to experiment, to see how these novelties were made, incising away by the fire during a cold winter night. Third, perhaps they wanted to wear such objects themselves because they liked how they looked, due to some underlying aesthetic sense. Fourth, they related these items to the newcomers and sought to construct some connection between themselves and the modern humans. These different possibilities ó and there may be more ó have different implications for an understanding of the cognitive capabilities of the Neandertals, and have implications regarding their ability to blend concepts and their ability to manipulate symbols.

The first possibility, making the objects solely for exchange or trade, does not require any sophisticated blending or metaphor skills, nor does it require any understanding of the symbolism such objects may have had for the modern humans. Rather, this would require craftsman-type skills, not unlike those needed to create stone tools. Similarly, the second possibility, absent-mindedly whittling before the fire, does not implicate the cognitive capabilities required for metaphor, symbolism or blending.

The third possibility, that the Neandertals had an aesthetic sense, at a minimum presupposes an ability to appreciate form and beauty on some level, and to desire to relate yourself to an object that you find to be aesthetically pleasing. That alone surely requires an interesting array of cognitive abilities, perhaps built upon an underlying biology of bodily experience that gives rise to emotions and feelings (Damasio 1994, 1999, 2003; Johnson 2007).

Finally, if they were trying to draw some connection between themselves and the modern humans, at a minimum they would need the ability to observe these newcomers, understand them as being different from the Neandertals, and conceive of them abstractly, creating some broader conception (a frame) of what it means to be a modern human, some notion of õmodern human-ness.ö They would also need to have a corresponding conception of õNeandertal-ness,ö and the ability to map modern human-ness on to Neandertal-ness. This could be a metaphorical mapping or, in blending terms, a *single-scope* network with two inputs and the frame of Neandertal-ness being projected to the blend. Alternatively, this might have been a *double-scope* network, with aspects of both human-ness and Neandertal-ness combined in the blend.

The archaeologists who suggest that Neandertals were copying modern humans have not offered detailed explanations of what goal, if any the Neandertals were seeking to reach. Mithenøs (2006: 232-233) description is a case in point:

> So my view is that the final Neanderthals in Europe were
> imitating the symbol-using modern humans without
> understanding the power of symbols. Imitation was, after
> all, at the centre of Neanderthal culture as the key means by
> which tool-making traditions were passed on from one
> generation to the next. We should not be at all surprised
> that they imitated the behaviour of the new, black-skinned

modern human arrivals ó and perhaps painted their own skins to look like them ó even if they were unable to appreciate the manner in which arbitrary meanings could be attached to physical objects such as beads.

. . . .

So, for instance, they had the technical skills for making artefacts as sophisticated as those of any modern human, and they undoubtedly also had complex social relationships which had to be continually monitored, manipulated and maintained. But they were unable to use their technical skills to make artefacts to mediate those social relationships, in the way that we do all the time by choosing what clothes or jewellery to wear, and as do all modern hunter-gatherers through their choice of beads and pendants.

This explanation seems less than satisfying. The Neandertals, he says, saw the darker-skinned modern humans and perhaps colored their own skins to look like them. Or they created pendants, again, to look like them. Why? The fact that Neandertals had the capability to copy these elements of the modern human appearance does not explain *why they might choose to do so* and, more importantly for our purposes, what cognitive capabilities are necessary to support that desire and its result. The capability to copy is a necessary prerequisite of the imitation, but does not suffice as an explanation of why the imitation would have taken place.

Viewing this scenario from the perspective of conceptual blending allows us to tease apart some of the underlying mechanics of the situation, as was done above in the initial example presupposing Neandertal symbolic abilities. We can start with the blend itself and work backwards. The conceptual blend created in the mind of the mimicking but supposedly symbolism-deficient Neandertal is, I would argue, a Neandertal with a single feature of a modern human (in our example: adorned with a pendant). Presumably the input spaces to this blend would be, on the one hand, a Neandertal body in its unadorned state, and on the other, the modern human body. There are a number of vital relations between the two inputs, items such as analogy, role, and similarity (Fauconnier and Turner 2002: 98-101), and there may be a compression of elements in the blend such that the Neandertal elements and the single modern human element projected to the blend are fused into a single person.

The Neandertal body input space would be structured by a frame of õNeandertal body,ö containing its various attributes. I would argue that the õmodern humanö input space would also need to be structured by a frame, presumably that of õmodern human Body.ö An element of this latter input space ó the pendant, in our example ó would be projected to the blend.

For a Neandertal to create this blend and take the physical actions necessary to create its material representation in the world, there needs to be an underlying desire to be like the modern humans, to draw a connection between their persons and his own, and therefore also a greater sense of what Iøve referred to as Modern õHuman-ness,ö

something intangible but nonetheless real and meaningful and, in this scenario, desirable. That desirability would need to be part of the frame of õmodern human body,ö or the blend would never be made.

Stated differently, once we focus on the question of why the blend would even be created, we are pushed toward the realization that something about the modern human body would need to be considered desirable by the Neandertals, and that in turn suggests that the frame used to structure the modern human input space must encompass more than the physical, modern human body. The frame for that input space has a qualitative dimension, a meaningfulness, that drives the desire to create the blend. The Neandertal that wears a pendant is trying to add that element of modern human life to her identity.

If so, then we can see that it is not satisfactory simply to say that õthe Neandertals imitated the modern humans without understanding the symbolic aspects of what they were doing.ö Of course it is true that they might not have understood the meanings that *the modern humans* gave to these pendants. No doubt communication between the two groups would have been difficult due to language differences (and, if some researchers are correct (Mithen 2006), the lack of modern language on the part of the Neandertals). But in order for the blend to be created, the Neandertals would have needed some ability to conceive of pendants as an element representative of modern humans, an act fundamentally involving symbolism. They would need to have abstracted from the physical modern humans a conception of *what they were like*, and they would have had to find it desirable to emulate that conception, it would have to have been meaningful to them. Moreover, they would then have had to blend that sense of modern human-ness with their preexisting self-conception of Neandertal identity, importing some aspects of modern human-ness into themselves.

Far from being a description of a weak, symbolism-deprived Neandertal cognition, this sounds like double-scope conceptual blending, the supposed hallmark of modern human cognition. Both inputs are structured by frames, and those frames differ from each other. Moreover, each frame is constructed from notions of the identity of a group, Neandertals on the one hand and modern humans on the other. The mental spaces with their frames are blended, with each contributing to the blend, and with results that appear in the archaeological record.

Blending theory has thus allowed us to break this process down into component parts and to evaluate each of those parts. In this case, I argue, that leads to surprising results that may contradict the commonly held position that Neandertals had no symbolic abilities.

CONCLUSIONS

1.   The Application of These Theories to the Upper Paleolithic

The question posed in this dissertation is whether utilizing theories of modern cognitive science is useful in understanding how artifacts and images were meaningful to the people of the Upper Paleolithic. Out of a plethora of potential theories of cognitive science, I have selected Conceptual Metaphor Theory and Conceptual Integration Theory to apply to the imagery of Les Trois Frères cave in Southern France and the artifacts of the Châtelperronian as represented by the assemblages from the Grotte Renne at Arcy-sur-Cure (Yonne), France.

The first problem was to define the goals of the research. What is required for a theory to be õusefulö in archaeological research? Must the application of that cognitive theory lead to results that can be proven correct? Must it at least produce hypotheses that can be tested against the archaeological record? Assuming a theory of cognitive science does yield some insights into life in the Ice Age, must the application of that theory be the *only* means by which a researcher could have obtained those insights?

Setting too high a standard against which theories must be judged will lead repeatedly to the conclusion that there is no value in any such theory. Indeed, much Paleolithic research would have to be discarded if unquestionable õproofö were to be required. As Lewis-Williams (2002) has stated, proof is hard to come by in studies of the Paleolithic, and our inquiries should be judged by whether they add to sets of intertwined lines of evidence that together can yield reasonable hypotheses.

For the purposes of this dissertation, by õusefulö I have meant whether the application of those theories can provide the researcher with new insights that he or she may not have had without utilizing the theory. This is not to say that this particular theory or line of inquiry must be the only possible means of reaching those insights; I reject that test. In fact, given the relative lack of resolution in the archaeological record of the Ice Age, it is not clear to me that any single theory will ever be the only way of gaining a particular set of insights into that time period.

I would further argue that for a cognitive theory to be õusefulö for these purposes it needs to be based upon underlying tenets and assumptions that can reasonably be extended back into deep time. The researcher needs not just to establish that the theory is applicable to people today, but must also show to an acceptable level of certainty that it is applicable to these earlier people who lived under circumstances so different from our modern world. Those points are necessary to rebut the suggestion, commonly leveled in archaeology, that the researcher is simply telling õjust so stories.ö

This was precisely the problem I faced in attempting to apply metaphor and blending theories to the Ice Age. Virtually all of the research done in connection with these two related theories of cognition concerns the modern world, õthe way we thinkö today.[16] In the case of blending theory, there have been studies drawing on material from

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[16] In fact, I myself have relied on the use of contemporary metaphors such as õEDUCATION is a JOURNEY.ö

a few thousand years ago, but even in those distant times people had the written word and complex civilizations such that few would argue that they were incapable of cognitive acts similar to our own. Since I proposed to study a time period far enough into our evolutionary past that human cognitive capabilities may have been different than today, it was important to assess the evidence supporting their application to that time period. It was important to establish some sense of õuniversalityö through time and space.

In my view this universality has been established to a sufficient degree to enable the application of those theories to the cognition of Ice Age peoples. The first issue was whether metaphorical thought is common throughout the world today. The research presented in this dissertation demonstrates that people today, across the globe, use conceptual metaphors to understand and think about the world.

That fact raised a second issue: since that research also showed that people across the world do not all use the *same* metaphors, how do we know what metaphors the people of the Ice Age may have used to understand their world? To resolve that problem and gain more confidence in the application of metaphors to deep time, I have concluded that it is necessary to focus on a narrow group of metaphors, the so-called primary metaphors, when selecting metaphors for analysis of imagery from the Ice Age. Those primary metaphors are based on fundamental, commonplace physical relationships shared by all people with bodies like ours, and the people of the Ice Age did have bodies anatomically like ours, so the likelihood that they understood their world through those primary metaphors is reasonably good. Although we cannot be certain that Ice Age peoples utilized specific metaphorical blends, we can increase our chances of accuracy by selecting metaphors that are based on common spatial relationships, relationships that they likely experienced in the same manner we do today. For example, the metaphor MORE is UP is based on the common experience of volume increasing in height as additional items or amounts are added: whether one piles DVDs on a table or reindeer skins next to a hearth, the more you pile on, the higher the stack becomes. As Lakoff (1993b) has stated, although it is not certain that all other people use the primary metaphor of MORE is UP, it is highly unlikely that any would use the opposite concept of LESS is UP because that violates the empirical experiences of everyday living and observation.

Drilling down a little deeper in search of concepts that are even more securely linked to human bodily engagement with the world, I have suggested that image schemas may provide a further tool that can reliably be applied to the Paleolithic. Like primary metaphors, image schemas are linked directly to the physical experience of moving, living, and interacting in the physical world. Although the generality/vagueness of image schemas does not make them easy to apply to specific images or artifacts, that generality allows for a wider, more certain application to Deep Time.

This research into primary metaphors and image schemas in turn underscored the importance of considering cognition in terms of the embodied mind. To use these cognitive theories to assess how images or artifacts were meaningful to the people of that time period, I turned to the underlying philosophical theory of embodied cognition, in particular the work of Mark Johnson, for a sense of what õmeaningö might be in connection with this inquiry. Johnson argues that meaning fundamentally has to do with how people *understand* something and what *significance* it has for them.

With regard to the Sorcerer, the metaphorical blends discussed above in connection with the positioning of that image within the Sanctuary at Les Trois Frères (Ariège) (primary metaphors Intimacy is Closeness, and Comprehension is a Journey) can thus be recast as a fundamental part of the *meaning* of the image for those who created it and those who came to view it in the depths of the cave. Those metaphors were part of how the image was understood by the people who apprehended it. While there undoubtedly were many other layers of understanding and significance placed upon the image ó e.g. a possible cultural practice of shamanism (Lewis-Williams 2002) or an historical context of a hunting/gathering people living in a particular ecology with animals (Conkey 2003) ó the physical, bodily experience of the image was fundamental. Being unable to approach the image adds to the meaning of the image as something that is separate from the viewer and distant from his or her everyday life. Being required to traverse difficult terrain in enveloping darkness in order to view the image adds to its meaning, in that the underground trek harkens back to the effort required in a move through a mountainous terrain, say from a summer camp to a winter camp. In this sense the meaning of the Sorcerer is based, at least in part, on the embodied cognition of its creators and viewers. In short, my claim is that the people who selected that location did so intentionally to take advantage of ó to õplay off ofö ó the metaphorical understandings that their viewers already utilized in understanding the world around them. It was the application of metaphor and blending theory to the positioning of the image that allowed me to reach that conclusion.

Two years ago I presented an earlier, more abridged version of those arguments to an archaeological journal for publication. One of the anonymous reviewers opined not only that my arguments were õjust so stories,ö but also that they added nothing to our knowledge of the Sorcerer. I believe that my efforts to establish õuniversality,ö mentioned above, answer the first point. If we assume that the people of that time utilized image schemas and primary metaphors ó and I have presented the evidence in favor of doing so ó then it is not fanciful to contend that those image schemas and primary metaphors influenced the positioning of some of the imagery they chose to create. With regard to the question of whether something new has been created by this method, I find it informative that I could find no prior attempts to analyze the positioning of the Sorcerer image in the cave. Researchers have commented on the õinaccessibleö or õdominantö position of the image, but as far as my research has shown they have gone no further. I contend that my arguments are not readily susceptible to the criticism that they offer nothing new, given that, to date, nothing on that point has been offered.

The application of metaphor and blending theory to the images of Les Trois Frères themselves, as opposed to the positioning of the images or the physical actions required to view them, was more problematic. Certainly the cognitive theories apply to images and not just to words, but applying them to images from a culture of so long ago, from which so much of the material record is gone, is not simple. We can say with some confidence that these people were blending concepts in their minds, but guessing at which concepts they were blending in a specific image, and what the blend was, is precarious. My research suggests that blending theory may be useful in providing a template or process for breaking down these blended images into their component parts, allowing us to focus on those individual parts for further research.

I reach a similar conclusion from my attempt to apply blending and metaphor theory to the Châtelperronian artifacts of the Neandertal-modern human Transition. Here too the primary utility of those cognitive theories was to provide a means to reduce a large, ill-defined problem into its component parts, and allow the researcher to focus on each of those parts in turn. I attempted to use blending theory to evaluate the common assertion that the Neandertals at Arcy-sur-Cure merely õmimickedö the symbolic activities of the modern humans without understanding the symbolism underlying those activities. By breaking that assertion down into its component parts, I concluded that it is not a particularly satisfying explanation of the actions of the Neandertals. Blending analysis suggests that we need to think more deeply about what is involved in mimicking someone, including what motivation drives this, what blends must necessarily be created and what that means about cognitive abilities.

In summing up the investigations contained in this dissertation, it is also important to consider the relative merits of metaphor theory vis-à-vis blending theory for application to the archaeological record of the Ice Age. We saw above that the two theories, although having some similarities, are somewhat different. Metaphor theory sees two domains and an act of mapping aspects of one domain (the source domain) to another (the target domain), and is linked to elaborate and sophisticated underlying theories and philosophy. I found much to be gained by applying those underlying theories ó image schemas, primary metaphors, the embodied mind ó to achieve a level of õuniversalityö that would allow some confidence in the epistemological basis of my arguments. Blending theory, by contrast, is a õmultiple space model,ö which allows for far more complex analyses with more component parts. Here I found the complexity of the model to be useful, because it allowed the analysis to be broken into smaller elements, each of which raised questions. Overall, each of the two theories was useful, but for different types of situations.

The analyses I have undertaken using metaphor and blending theory are by no means restricted to studies of the Ice Age. Using these approaches on the archaeological record of more recent times would in some senses be easier, because there would be no issue regarding what Iøve called õuniversality,ö the idea that the objects of our inquiry thought the way we do today. The archaeological literature on metaphor theory demonstrates that there are many uses for that theory in our field, and it is hoped that blending theory becomes equally well known to archaeologists.

But with regard to the Ice Age, it is safe to say that we will never gain a complete understanding of why and how any particular image was meaningful to individuals who lived long ago. However, through a diverse range of research strategies, including taking into consideration the findings of modern cognitive science and the tenets of embodied philosophy, perhaps we can begin to engage with Paleolithic art as they might have.

2. *Avenues for Further Research*

A project such as this one inevitably raises more questions than it answers. One important byproduct of such an investigation is to identify new and interesting avenues for further research. I believe the following are potential research projects that might advance our ability to apply these theories of cognitive science to the European Ice Age:

- *The Creation of Frames*. From the above description of frames and the key role they play in conceptual blending theory, it is clear that a better understanding of how frames are created and propagated throughout a community would be useful to a consideration not just of which frames may have been common in the Ice Age, but also of at what point in human cognitive development they became part of human engagement with the world. Fauconnier and Turner (2002) refer to the development of frames as an "arduous process," and they note that "cultures build networks over long periods of time that get transmitted over generations," but that process itself has not been a focus of their work to date. In terms of human evolution, a study of frame creation – how it took place and what cognitive abilities it requires – would implicate purely biological vs. co-evolutionary theories regarding the development of symbolic abilities and the ability to perform conceptual blending. If one believes that the material culture of the Upper Paleolithic was the result of a combination of the interaction of social/cultural factors and biological ones, as opposed to believing simply that a chance biological mutation in the human brain led directly to the development of symbolic and artistic abilities, the development of frames could be one key social/cultural development in that process.

- *The Role of Emotion in Blending*. Terry Deacon (2006) has raised intriguing issues about how emotion might factor into the process of conceptual blending. Other work on the topic of emotions and human thinking are also important, such as those of Damasio (1994, 1999, 2003) and Koestler (1964). Expanding this line of research could in turn augment the utility of applying blending theory to the Ice Age. Emotions could be another element providing a level of universality to the human experience through time, and thus adding a component of emotion to blending theories could provide inferences about Deep Time.

- *The Philosophy of Aesthetics*. Mark Johnson's work on the philosophy of aesthetics, presented in his book *The Meaning of the Body* (Johnson 2007), opens the door to inquiries on other aspects of the embodied mind that may illuminate the thinking of Ice Age peoples. For example, his work on the aesthetics of music and the biology of the human mind could add to our understanding of Ice Age cognition, as might his ideas on the aesthetics of the apprehension of images visually. This inquiry would no doubt expand into the works he cites, such as the philosophies of Dewey, James and Merleau-Ponty. It might also tie into studies of human musical abilities, such as Mithen's *The Singing Neanderthals* (Mithen 2006) and studies of perception and art, such as those of Arnheim (1969, 1974).

- *The Literature of Identity*. In this dissertation I have attempted to expand upon Fauconnier and Turner's consideration of identity and how that might be viewed from the perspective of blending theory. The topic of identity is a large one in the anthropological literature. Surely there is much to be gained by a more thorough consideration of that literature and an attempt to reconcile it with blending theory.

➢ *The Archaeology of the Body*. Joyce (2005) and others have worked extensively on issues relating to the human body in archaeology and anthropology. It would be valuable to consider their work from the perspective of the embodied mind, metaphor and image schemas, per the work of Lakoff and Johnson, so see what confluence there might be between these bodies of work. This relates to item 4 in that it clearly implicates issues of identity.

➢ *The Relationship Between Symbolism and Blending*. The extent to which blending relies on an underlying ability to manipulate symbols, or conversely whether blending gives rise to that ability, has ramifications for the development of blending, symbolism, and õmodern human behaviorö more generally. This subject has been debated to some extent between Deacon and Fauconnier and Turner, but little has been written about it.

➢ *Shamanism and Metaphor*. Some of the arguments that Ice Age art relates to the practice of shamanism are based on psychology/cognitive science, such as Lewis-Williamsø(2002) discussion of altered states of consciousness leading to visual hallucinations and, in some cases, cave art. It may be informative to consider those arguments in light of metaphor and/or blending theory.

In closing, in my view this dissertation has demonstrated that the modern cognitive science theories of conceptual metaphor and conceptual blending can lead to some valuable insights about the European Ice Age. The most worthwhile lines of inquiry, however, may not those that initially appear promising.

REFERENCES

Abdulmoneim, M. S.
    2006   The Metaphorical Concept "Life is a Journey" in the Qur'an: A Cognitive-Semantic Analysis. *Metaphorik* 10:94-132.

Ahern, J., I. Karavanic, M. Paunovic, I. Jankovic and F. Smith
    2004   New Discoveries and Interpretations of Hominid Fossils and Artifacts from Vindija Cave, Croatia. *Journal of Human Evolution* 46:25-65.

Aiello, L. C.
    1993   The Fossil Evidence for Modern Human Origins in Africa; a Revised View. *American Anthropologist* 95:73-96.

Alverson, H.
    1994   *Semantics and Experience: Universal Metaphors of Time in English, Mandarin, Hindi and Sesotho*. Johns Hopkins University Press, Baltimore, Maryland.

Arnheim, R.
    1969   *Visual Thinking*. University of California Press, Berkeley and Los Angeles.

    1974   *Art and Visual Perception, A Psychology of the Creative Eye*. Revised Edition ed. University of California Press, Berkeley, Los Angeles and London.

Bahn, P. and J. Vertut
    1988   *Images of the Ice Age*. New Interlitho, Milan.

Bamforth, D. B.
    1993   Stone Tools, Steel Tools: Contact Period Household Technology at Helo'. In *Ethnohistory and Archaeology: Approaches to Postcontact Change in the Americas*, edited by J. D. Rogers and S. M. Wilson, pp. 237. Plenum Press, New York and London.

Bard, E., F. Rostek and G. Menot-Combes
    2004   A Better Radiocarbon Clock. *Science* 303:178-179.

Beaudry, M. C., L. J. Cook and S. A. Mrozowski
    1991   Artifacts and Active Voices: Material Culture as Social Discourse. In *The Archaeology of Inequality*, edited by R. McGuire and R. Paynter, pp. 150-191. Social Archaeology. Blackwell, Oxford.

Beck, J. W., D. A. Richards, R. L. Edwards, B. W. Silverman, P. L. Smart, D. J. Donahue, S. Hererra-Osterheld, G. S. Burr, L. Calsoyas, A. J. T. Jull and D. Biddulph
      2001   Extremely Large Variations of Atmospheric 14C Concentration During the Last Glacial Period. *Science* 292:2453-2458.

Bégouën, C. H.
      1929   The Magic Origin of Prehistoric Art. *Antiquity* 3:5-19.

Bégouën, H. and L. A. Breuil
      1958, reprinted 1999 *Les Cavernes du Volp*. Translated by P. Bahn. American Rock Art Research Association, Tucson, Arizona.

Bégouën, R. and J. Clottes
      1987   Les Trois-Frères after Breuil. *Antiquity* 61:180-87.

Biesele, M.
      1993   *Women Like Meat*. Indiana University Press, Bloomington.

Bird-David, N.
      1990   The Giving Environment: Another Perspective on the Economic System of Gatherer-Hunters. *Current Anthropology* 31(2):189-196.

Bocquet-Appel, J.-P. and P. Y. Demars
      2000   Neanderthal Contraction and Modern Human Colonization of Europe. *Antiquity* 74(285):544.

Boden, M. A.
      1998   What is Creativity? In *Creativity in Human Evolution and Prehistory*, edited by S. Mithen, pp. 22-60. Theoretical Archaeology Group (TAG). Routledge, New York.

Boers, F.
      2003   Applied Linguistics Perspectives on Cross-Cultural Variation in Conceptual Metaphor. *Metaphor and Symbol* 18(4):231-238.

Bosinski, G., J. Hahn, E. Wagner, K. Wehrberger and R. Ziegler
      1994   *Der Löwenmensch*. Thorbecke, Sigmaringen.

Bradley, R.
      2000   *An Archaeology of Natural Places*. Routledge, London and New York.

Bragdon, K. J.
      1988   The Material Culture of the Christian Indians of New England, 1650-1775. In *Documentary Archaeology in the New World*, edited by M. C. Beaudry, pp. 126-131. Cambridge University Press, Cambridge.

Breuil, A. H.
    1952   *Four Hundred Centuries of Cave Art*. Translated by M. E. Boyle. Fernand Windels, France.

Brück, J.
    2004   Material Metaphors, The Relational Construction of Identity in Early Bronze Age Burials in Ireland and Britain. *Journal of Social Archaeology* 4(3):307-333.

Burenhult, G. (editor)
    1993   *The First Humans*. HarperSanFrancisco.

Cabrera Valdes, V. and J. Bischoff
    1989   Accelerator 14C dates for Early Upper Paleolithic (Basal Aurignacian) at El Castillo Cave (Spain). *Journal of Archaeological Science* 16:577-584.

Caramelli, D., C. Lalueza-Fox, C. Vernesi, M. Lari, A. Casoli, F. Mallegni, B. Chiarelli, I. Dupanloup, J. Bertranpetit, G. Barbujani and G. Bertorelle
    2003   Evidence for a Genetic Discontinuity between Neandertals and 24,000-year-old Anatomically Modern Europeans. *Proceedings of the National Academy of Science* 100(11):6593-6597.

Carroll, N.
    1994   Visual Metaphor. In *Aspects of Metaphor*, edited by J. Hintikka, pp. 189-218. Kluwer Academic Publishers, Dordrecht, Netherlands.

Cep, B. and J. Waiblinger
    2001   The Use of Cave and Open-Air Sites in Southern Germany. In *Settlement Dynamics of the Middle Paleolithic and Middle Stone Age*, edited by N. J. Conard, pp. 251-263. Tuebingen Publications in Prehistory. Kerns Verlag, Tuebingen.

Charteris-Black, J.
    2003   Speaking With Forked Tongue: A Comparative Study of Metaphor and Metonymy in English and Malay Phraseology. *Metaphor and Symbol* 18(4):289-310.

Chazan, M.
    1995   The Language Hypothesis for the MIddle-to-Upper Paleolithic Transition. *Current Anthropology* 36(5):749-768.

Churchill, S. and F. Smith
    2000   Makers of the Early Aurignacian of Europe. *Yearbook of Physical Anthropology* 43:61-115.

Cienki, A.
    1997   Some Properties and Groupings of Image Schemas. In *Lexical and Syntactical Constructions and the Construction of Meaning*, edited by M. Verspoor, K. D. Lee and E. Sweetser, pp. 3-15. Amsterdam Studies in the theory and History of Linguistic Science. John Benjamins Publishing Company, Amsterdam/Philadelphia.

Cienki, A. and C. Müller
    2008   Metaphor, Gesture, and Thought. In *The Cambridge Handbook of Metaphor and Thought*, edited by R. J. Gibbs, pp. 483-501. Cambridge University Press, Cambridge.

Clottes, J.
    2003   *Chauvet Cave, The Art of Earliest Times*:225.

    2008   *Cave Art*. Phaidon Press Limited, London.

    2009   Sticking bones into cracks in the Upper Palaeolithic. In *Becoming Human, Innovation in Prehistoric Material and Spiritual Culture*, edited by C. Renfrew and I. Morley, pp. 195-211. Cambridge University Press, Cambridge.

Columbus, C. K.
    2006   Many-Sided Analogies in Arguedas, Asturias, and Malouf. *Metaphor and Symbol* 21(2):105-120.

Conard, N.
    2009   A female figurine from the basal Aurignacian of Hohle Fels Cave in southwestern Germany. *Nature* 459(14 May 2009):248-252.

Conard, N. and M. Bolus
    2001   Advances in the Study of Human Dispersal and Evolution, pp. 86, Tübingen.

Conard, N. and H. Floss
    2000   Eine Elfenbeinplastik vom Hohle Fels bei Schelklingen und ihre Bedeutung für die Entwicklung des Jungpaläolithikums in Südwestdeutschland. *Archäologisches Korrespondenzblatt* 30:473-480.

Conard, N. J.
    2002   The Timing of Cultural Innovations and the Dispersal of Modern Humans in Europe. *Terra Nostra* 6:82-94.

    2003   Palaeolithic Ivory Sculptures from Southwestern Germany and the Origins of Figurative Art. *Nature* 426(18/25 December):830-832.

Conard, N. J., M. Bolus, P. Goldberg and S. Münzel
    2006   The Last Neanderthals and First Modern Humans in the Swabian Jura. In *When Neanderthals and Modern Humans Met*, edited by N. J. Conard, pp. 305-341. Kerns Verlag, Tübingen.

Conard, N. J., P. M. Grootes and F. Smith
    2004   Unexpectedly Recent Dates for Human Remains from Vogelherd. *Nature* 430:198-201.

Conard, N. J., M. Malina and S. Münzel
    2009   New Flutes Document the Earliest Musical Tradition in Southwestern Germany. *Nature* 460:737-740.

Conard, N. J. and H.-P. Uerpmann
    2000   New Evidence for Paleolithic Rock Painting in Central Europe. *Current Anthropology* 41(5):853-856.

Conkey, M.
    1978   Style and Information in Cultural Evolution: Toward a Predictive Model for the Paleolithic. In *Social Archaeology*, edited by C. L. Redman, M. J. Berman, E. Curtin, W. J. Langhorne, N. Versaggi and J. Wanser, pp. 61-85. Academic Press, New York.

    1980   The Identification of Prehistoric Hunter-Gatherer Aggregation Sites: The Case of Altamira. *Current Anthropology* 21(5):609-630.

    1987   New Approaches in the Search for Meaning? A Review of Research in "Palaeolithic Art". *Journal of Field Archaeology* 14:413-30.

    1993   Humans as Materialists and Symbolists: Image Making in the Upper Paleolithic. In *The Origin and Evolution of Humans and Humanness*, edited by D. T. Rasmussen, pp. 95-118. Jones and Bartlett Publisher, Boston.

    1997   Beyond Art and Between the Caves: Thinking About Context in the Interpretive Process. In *Beyond Art: Pleistocene Image and Symbol*, edited by M. Conkey, O. Soffer, D. Stratmann and N. Jablonski, pp. 343-67. Memoirs of the California Academy of Sciences, N. G. Jablonski, general editor. California Academy of Sciences, San Francisco.

    2003   Thinking Strings: On Theory, Shifts, and Conceptual Issues in the Study of Paleolithic Art. In *Seeing and Knowing: Ethnography and Beyond in Understanding Rock Art. Papers in Honor of David Lewis-Williams*, edited by C. Chippindale, B. Smith and G. Blundell.

2009   Materiality and Meaning-Making in the Understanding of the Palaeolithic 'Arts'. In *Becoming Human, Innovation in Prehistoric Material and Spriritual Culture*, edited by C. Renfrew and I. Morley, pp. 179-194. Cambridge University Press, Cambridge.

Coolidge, F. and T. Wynn
2004   A Cognitive and Neuropsychological Perspective on the Châtelperronian. *Journal of Anthropological Research* 60:55-73.

Coolidge, F. L. and T. Wynn
2009   *The Rise of Homo Sapiens, The Evolution of Modern Thinking*. Wiley-Blackwell, Chichester.

Coulson, S.
2001   *Semantic Leaps, Frame-Shifting and Conceptual Blending in Meaning Construction*. Cambridge University Press, Cambridge.

Coulson, S. and T. Oakley
2000   Blending Basics. *Cognitive Linguistics* 11(3/4):175-196.

Cusick, J. G. (editor)
1998   *Historiography of Acculturation: An Evaluation of Concepts and Their Application in Archaeology*. Occasional Paper No. 25. Center for Archaeological Investigations, Southern Illinois University.

d'Errico, F. and C. S. Henshilwood
2003   Archaeological Evidence for the Emergence of Language, Symbolism, and Music. *Journal of World Prehistory* 17:1-70.

d'Errico, F., J. Zilhao, M. Julien, D. Baffier and J. Pelegrin
1998   Neanderthal Acculturation in Western Europe? A Critical Review of the Evidence and Its Interpretation. *Current Anthropology* 39 Supplement:S1-S22.

Damasio, A. R.
1994   *Descartes' Error, Emotion, Reason and the Human Brain*. Avon Books, Inc., New York, New York.

1999   *The Feeling of What Happens*. Harcourt, Inc., Orlando.

2003   *Looking for Spinoza, Joy, Sorrow and the Feeling Brain*. Harcourt, Inc., Orlando.

Damblon, F., P. Haesaerts and J. van der Plicht
1996   New Datings and Considerations on the Chronology of Upper Palaeolithic Site in the Great Eurasiatic Plain. *Préhistoire Européenne* 9:177-231.

Davidson, I.

    1997   The Power of Pictures. In *Beyond Art: Pleistocene Image and Symbol*, edited by M. Conkey, O. Soffer, D. Stratmann and N. G. Jablonski, pp. 125-159. California Academy of Sciences, San Francisco, California.

Davis, W.

    1985   Present and Future Directions in the Study of Rock Art. *South African Archaeological Bulletin* 40:5-10.

Deacon, T.

    2006   The Aesthetic Faculty. In *The Artful Mind*, edited by M. Turner, pp. 21-53. Oxford University Press, New York.

Deignan, A.

    2003   Metaphorical Expressions and Culture: An Indirect Link. *Metaphor and Symbol* 18(4):255-271.

Dewey, J.

    1934   *Art as Experience*. Perigee Books, New York.

Dirven, R.

    1993   *Metaphor and Nation: Metaphors Afrikaners Live By*. Peter Lang, Frankfurt Am Main.

Dissanayake, E.

    2000   *Art and Intimacy, How the Arts Began*. University of Washington Press, Seattle and London.

Donald, M.

    2006   Art and Cognitive Evolution. In *The Artful Mind*, edited by M. Turner, pp. 3-20. Oxford University Press, New York.

Eagleton, T.

    2007   *The Meaning of Life, A Very Short Introduction*. Very Short Introductions. Oxford University Press, New York.

Farizy, C.

    1990   The Transition from Middle to Upper Paleolithic at Arcy-sur-Cure (Yonne, France): Technological, Economic and Social Aspects. In *The Emergence of Modern Humans: an Archaeological Perspective*, edited by P. Mellars and C. Stringer, pp. 303-326. Edinburgh University Press, Edinburgh.

Fauconnier, G.
1994 *Mental Spaces: Aspects of Meaning Construction in Natural Language*. Cambridge University Press, New York.

1997 *Mappings in Thought and Language*. Cambridge University Press, New York.

Fauconnier, G. and M. Turner
2002 *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*. Basic Books, New York.

2008 Rethinking Metaphor. In *The Cambridge Handbook of Metaphor and Thought*, edited by R. J. Gibbs, pp. 53-66. Cambridge University Press, New York.

Féblot-Augustins, J.
1993 Mobility strategies in the late Middle Palaeolithic of Central Europe and Western Europe: Elements of Stability and Variability. *Journal of Anthropological Archaeology* 12:211-65.

Feldman, J.
2006 *From Molecule to Metaphor : A Neural Theory of Language*. MIT Press.

Ferrari, G.
2006 Architectural Space as Metaphor in the Greek Sanctuary. In *The Artful Mind*, edited by M. Turner, pp. 225-240. Oxford University Press, New York.

Forceville, C.
2008 Metaphor in Pictures and Multimodal Representations. In *The Cambridge Handbook of Metaphor and Thought*, edited by R. J. Gibbs, pp. 462-482. Cambridge University Press, Cambridge.

2010 A Course in Pictorial and Multimodal Metaphor; Lecture 2. When is something a pictorial metaphor? vol. 2010.

Freeman, L. G. and J. Gonzalez Echegaray
1970 Aurignacian Structural Features and Burials at Cueva Morin (Santander, Spain). *Nature* 226:722-726.

Fritz, C. and G. Tosello
2007 The Hidden Meaning of Forms: Methods of Recording Paleolithic Parietal Art. *Journal of Archaeological Method and Theory* 14(1):48-80.

Gamble, C.

    1999   *The Palaeolithic Societies of Europe*. Cambridge World Archaeology. Cambridge University Press, Cambridge.

    2007   *Origins and Revolutions, Human Identity in Earliest Prehistory*. Cambridge University Press, Cambridge.

Gibbs, R. J.

    1994   *The Poetics of Mind*. Cambridge University Press, Cambridge.

Gosden, C.

    1994   *Social Being and Time*. Blackwell Publishers, Oxford.

Grady, J.

    1997   *Foundations of Meaning: Primary Metaphors and Primary Scenes*, University of California, Berkeley.

    2005a   Image Schemas and Perception: Refining a Definition. In *From Perception to Meaning, Image Schemas in Cognitive Linguistics*, edited by B. Hampe, pp. 35-55. Cognitive Linguistics Research. vol. 29, R. Dirven, R. Langacker and J. Taylor, general editor. Mouton de Gruyter, Berlin.

    2005b   Primary Metaphors as Inputs to Conceptual Integration. *Journal of Pragmatics* 37:1595-1614.

Grady, J., T. Oakley and S. Coulson

    1999   Blending and Metaphor. In *Metaphor in Cognitive Linguistics*, edited by R. J. Gibbs and G. J. Steen, pp. 101-124. John Benjamins Publishing Company, Amsterdam.

Graves, P.

    1991   New Models and Metaphors for the Neanderthal Debate. *Current Anthropology* 32(5):513-541.

Green, R. E.

    2010   A Draft Sequence of the Neandertal Genome. *Science* 328:710-722.

Hahn, J.

    1988   *Die Geissenklösterle-Höhle im Achtal bei Blaubeuren I*. Konrad Theiss Verlag, Stuttgart.

Hahn, J. and S. Münzel

    1995   Knochenflöten aus dem Aurignacien des Geißenklösterle bei Blaubeuren, Alb-Donau-Kreis. *Fundber. Baden-Württemberg* 20:1-12.

Hampe, B. (editor)

    2005a   *From Image to Perception, Image Schemas in Cognitive Linguistics*. 29. Mouton de Gruyter, Berlin.

    2005b   Image Schemas in Cognitive Linguistics: Introduction. In *From Perception to Meaning, Image Schemas in Cognitive Linguistics*, edited by B. Hampe, pp. 1-12. Cognitive Linguistics Research. vol. 29, R. Dirven, R. Langacker and J. Taylor, general editor. Mouton De Gruyter, Berlin.

Harrison, R.

    2002   Archaeology and the Colonial Encounter. *Journal of Social Archaeology* 2(3):352-377.

Hayden, B.

    1993   The Cultural Capacities of Neandertals: a Review and Re-evaluation. *Journal of Human Evolution* 24:113-146.

Henshilwood, C. S., F. d'Errico, M. Vanhaeren, K. van Niekerk and Z. Jacobs

    2004   Middle Stone Age Shell Beads from South Africa. *Science* 304:404.

Henshilwood, C. S., et al.

    2002   Emergence of Modern Human Behavior: Middle Stone Age Engravings from South Africa. *Science* 295:1278 - 1280.

Henshilwood, C. S. and C. W. Marean

    2003   The Origin of Modern Human Behavior. *Current Anthropology* 44(5):627-637.

Herskovits, M.

    1938   *Acculturation: The Study of Culture Contact*. J.J. Augustin Publisher, New York.

Hiraga, M.

    1999   DEFERENCE as DISTANCE: Metaphorical Base of Honorific Verb Construction in Japanese. In *Cultural, Psychological and Typological Issues in Cognitive Linguistics: Selected Papers of the Biannual ICLA Meeting in Albuquerque, July 1995*, edited by C. Sinha and S. Wilcox, pp. 47-68. John Benjamins, Amsterdam/Philadelphia.

Hublin, J.-J., F. Spoor, M. Braun, F. Zonneveld and S. Condemi

    1996   A Late Neanderthal Associated with Upper Palaeolithic Artefacts. *Nature* 381:224-226.

Hughen, K., S. Lehman, J. Southon, J. Overpeck, O. Marchal, C. Herring and J. Turnbull

    2004   14C Activity and Global Carbon Cycle Changes over the Past 50,000 Years. *Science* 303:202-207.

Hutchins, E.

> 2005   Material Anchors for Conceptual Blends. *Journal of Pragmatics* 37:1555-1577.

Ibarretxe-Antuñano, I.

> 1999   Metaphorical Mappings in the Sense of Smell. In *Metaphor in Cognitive Linguistics*, edited by R. J. Gibbs and G. J. Steen, pp. 29-45. Amsterdam Studies in the Theory and History of Linguistic Science, Series IV -- Current Issues in Linguistic Theory, E. F. K. Koerner, general editor. John Benjamins Publishing Company, Amsterdam.

Ingold, T.

> 1992   Comment on 'Beyond the Original Affluent Society'. *Current Anthropology* 33:34-47.

James, W.

> 1911/1979   Percept and Concept. In *Some Problems in Philosophy*, edited by F. H. Burkhardt, F. Bowers and I. K. Skrupskelis, pp. 21-60. Harvard University Press, Cambridge, Massachusetts.

Johanson, D. and B. Edgar

> 1996   *From Lucy to Language*. Simon & Schuster Editions. Simon & Schuster, New York.

Johnson, M. (editor)

> 1981   *Philosophical Perspectives on Metaphor*. University of Minnesota Press, Minneapolis.

> 1987   *The Body in the Mind, The Bodily Basis of Meaning, Imagination, and Reason*. The University of Chicago Press, Chicago.

> 2005   The Philosophical Significance of Image Schemas. In *From Perception to Meaning, Image Schemas in Cognitive Linguistics*, edited by B. Hampe, pp. 15-33. 29 ed. Cognitive Linguistics Research, R. Dirven, R. Langacker and J. Taylor, general editor. Walter de Gruyter GmbH & Co., Berlin.

> 2007   *The Meaning of the Body, Aesthetics of Human Understanding*. University of Chicago Press.

Jordan, S. and C. Schrire

> 2002   Material Culture and the Roots of Colonial Society at the South African Cape of Good Hope. In *The Archaeology of Colonialism*, edited by C. L. Lyons and J. K. Papadopoulos, pp. 241-272. Getty Research Institute, Los Angeles.

Jöris, O. and D. Adler
>2008   Setting the Record Straight: Toward a Systematic Chronological Understanding of the Middle to Upper Paleolithic Boundary in Eurasia. *Journal of Human Evolution* 55(5):761-763.

Joyce, R.
>2005   Archaeology of the Body. *Annual Review of Anthropology* 34:139-158.

Kimmel, M.
>2005   Culture Regained: Situated and Compound Image Schemas. In *From Perception to Meaning, Image Schemas in Cognitive Linguistics*, edited by B. Hampe, pp. 285-311. Cognitive Linguistics Research. vol. 29, R. Dirven, R. Langacker and J. Taylor, general editor. Mouton de Gruyter, Berlin.

Klein, R. G.
>1995   Anatomy, Behavior, and Modern Human Origins. *Journal of World Prehistory* 9(2):167 - 198.

>2000   Archeology and the Evolution of Human Behavior. *Evolutionary Anthropology* 9(1):17-36.

Koestler, A.
>1964   *The Act of Creation*. Dell Publishing Company, New York.

Kövecses, Z.
>2002   *Metaphor: A Practical Introduction*. Oxford University Press, Cary, NC.

>2003   Language, Figurative Thought, and Cross-Cultural Comparison. *Metaphor and Symbol* 18(4):311-320.

Kozlowski, J.
>1988   The Transition from the Middle to the Early Upper Palaeolithic in Central Europe and the Balkans. In *The Early Upper Palaeolithic, Evidence from Europe and the Near East*, edited by J. F. Hoffecker and C. A. Wolff, pp. 193-235. British Archaeological Reports, International Series. vol. 437.

Krings, M., S. A, R. W. Schmitz, H. Krainitzki, M. Stoneking and S. Paabo
>1997   Neandertal DNA Sequence and the Origin of Modern Humans. *Cell* 90:19-30.

Krings, M., C. Capelli, F. Tschentscheer, H. Geisert, S. Meyer, A. von Haeseler, K. Grossschmidt, G. Possnert, M. Paunovic and S. Paabo
>2000   A view of Neandertal genetic diversity. *Nature Genetics* 26:144-46.

Krings, M., H. Hesisert, R. Schmitz, H. Krainitzki and S. Paabo
  1999 DNA Sequence of the Mitochondrial Hypervariable Region II from the Neandertal Type Specimen. *Proceedings of the National Academy of Science* 96:5581ó5585.

Kuhn, S. L. and M. C. Stiner
  1998 Middle Paleolithic 'Creativity,' Reflections on an Oxymoron? In *Creativity in Human Evolution and Prehistory*, edited by S. Mithen, pp. 143-164. Routledge, London and New York.

Kuhn, S. L., M. C. Stiner and E. Güleç
  1999 Initial Upper Palaeolithic in Southcentral Turkey and its Regional Context: a Preliminary Report. *Antiquity* 73:505-517.

Lakoff, G.
  1987 *Women, Fire, and Dangerous Things, What Categories Reveal about the Mind*. The University of Chicago Press, Chicago and London.

  1993a The Contemporary Theory of Metaphor. In *Metaphor and Thought*, edited by A. Ortony. Second ed. Cambridge University Press, Cambridge.

  1993b The Contemporary Theory of Metaphor. In *Metaphor and Thought*, edited by A. Ortony, pp. 202-51. Second ed. Cambridge University Press, Cambridge.

  2008 The Neural Theory of Metaphor. In *The Cambridge Handbook of Metaphor and Thought*, edited by R. J. Gibbs, pp. 17-38. Cambridge University Press, New York.

Lakoff, G. and M. Johnson
  1980 *Metaphors We Live By*. University of Chicago Press, Chicago.

  1999 *Philosophy in the Flesh*. Basic Books, New York.

Leroi-Gourhan, A.
  1964 *Gesture and Speech*. Translated by A. B. Berger. The MIT Press, Cambridge, Massachusetts.

  1965 *Treasures of Prehistoric Art*. Harry N. Abrams, Inc., New York.

Lewis-Williams, D.
  2002 *The Mind in the Cave*. Thames & Hudson, London.

Lieberman, D. E.
    1998   Neandertal and Early Modern Human Mobility Patterns. In *Neandertals and Modern Humans in Western Asia*, edited by T. Akazawa, K. Aoki and O. Bar-Yosef, pp. 263-275. Plenum Press, New York and London.

Lightfoot, K.
    1995   Culture Contact Studies: Redefining the Relationship Between Prehistoric and Historical Archaeology. *American Antiquity* 60(2):199-217.

Lightfoot, K. and A. Martinez
    1995   Frontiers and Boundaries in Archaeological Perspective. *Annual Review of Anthropology* 24:471-492.

Lightfoot, K., A. Martinez and A. M. Schiff
    1998   Daily Practice and Material Culture in Pluralistic Social Settings: An Archaeological Study of Culture Change and Persistence From Fort Ross, California. *American Antiquity* 63(2):199-222.

Lightfoot, K. and W. Simmons
    1998   Culture Contact in Protohistoric California: Social Contexts of Native and European Encounters. *Journal of California and Great Basin Anthropology* 20(2):138-170.

Littlemore, J.
    2003   The Effect of Cultural Background on Metaphor Interpretation. *Metaphor and Symbol* 18(4):273-288.

Lofland, L. H.
    1973   *A World of Strangers: Order and Action in Public Space*. Basic Books, New York.

Lohse, E. S.
    1988   Trade Goods. In *History of Indian-White Relations*, edited by W. E. Washburn, pp. 396-403. Handbook of North American Indians. vol. 4. Smithsonian Institution.

Loren, D. D.
    2001   Social Skins: Orthodoxies and Practices of Dressing in the Early Colonial Lower Mississippi Valley. *Journal of Social Archaeology* 1(2):172-189.

MacArthur, F.
    2005   The Competent Horseman in a Horseless World: Observations on a Conventional Metaphor in Spanish and English. *Metaphor and Symbol* 20(1):71-94.

McBrearty, S. and A. S. Brooks
    2000   The Revolution that Wasn't: a New Interpretation of the Origin of Modern Human Behavior. *Journal of Human Evolution* 39:453-563.

Mellars, P.
    1996   *The Neanderthal Legacy*. Princeton University Press, Princeton.

    1998   The Impact of Climatic Chages on the Demography of Late Neandertal and Early Anatomically Modern Populations in Europe. In *Neandertals and Modern Humans in Western Asia*, edited by T. Akazawa, K. Aoki and O. Bar-Yosef, pp. 493-507. Plenum Press, New York and London.

    1999   The Neanderthal Problem Continued. *Current Anthropology* 40(3):341-364.

    2004   Neanderthals and the Modern Human Colonization of Europe. *Nature* 432:461-465.

    2005   The Impossible Coincidence. A Single-Species Model for the Origins of Modern Human Behavior in Europe. *Evolutionary Anthropology* 14:12-27.

Mithen, S.
    1996   *The Prehistory of the Mind: The Cognitive Origins of Art and Science*. Thames & Hudson, New York.

    1998   A Creative Explosion? Theory of Mind, Language and the Disembodied Mind of the Upper Paleolithic. In *Creativity in Human Evolution and Prehistory*, edited by S. Mithen, pp. 165-191. Routledge, London and New York.

    2006   *The Singing Neanderthals, The Origins of Music, Language, Mind, and Body*. Harvard University Press, Cambridge, Massachusetts.

Mohen, J.-P.
    2002   *Prehistoric Art*. Telleri, Paris.

Movius, H.
    1969   The Chatelperronian in French Archaeology: the Evidence of Arcy-sur-Cure. *Antiquity* 43:111-123.

Niven, L.
    2006   *The Palaeolithic Occupation of Vogelherd Cave*. Tübingen Publications in Prehistory. Kerns Verlag, Tübingen

Núñez, R. and E. Sweetser
    2006   With the Future Behind Them: Convergent Evidence from Aymara Language and Gesture in the Crosslinguistic Comparison of Spatial Construals of Time. *Cognitive Science* 30:401-450.

O'Brien, T.
    1990   *The Things They Carried*. Broadway Books, New York.

Ortman, S.
    2000   Conceptual Metaphor in the Archaeological Record: Methods and an Example from the American Southwest. *American Antiquity* 65(4):613-645.

Ovchinnikov, I. V., A. Gotherstrom, G. P. Romanova, V. M. Kharitonov, K. Liden and W. Goodwin
    2000   Molecular Analysis of Neanderthal DNA from the Northern Caucasus. *Nature* 404:490-493.

Ozcaliskan, S.
    2007   Metaphors We Move By: Children's Developing Understanding of Metaphorical Motion in Typologically Distinct Languages. *Metaphor and Symbol* 22(2):147-168.

Pritzker, S.
    2007   Thinking Hearts, Feeling Brains: Metaphor, Culture, and the Self in Chinese Narratives of Depression. *Metaphor and Symbol* 22(3):251-274.

Quimby, G. I. and A. Spoehr
    1951   Acculturation and Material Culture. *Fieldiana: Anthropology* 36(6):107-147.

Quinn, N.
    1991   The Cultural Basis of Metaphor. In *Beyond Metaphor, The Theory of Tropes in Anthropology*, edited by J. W. Fernandez, pp. 56-93. Stanford University Press, Stanford, California.

Redfield, R., R. Linton and M. Herskovits
    1936   Memorandum for the Study of Acculturation. *American Anthropologist* 38(1):149-152.

Renfrew, C.
    1994   Towards a Cognitive Archaeology. In *The Ancient Mind, Elements of Cognitive Archaeology*, pp. 3-12. Cambridge University Press.

Renfrew, J. M.

    2009   Neanderthal Symbolic Behaviour? In *Becoming Human, Innovation in Prehistoric Material and Spiritual Culture*, edited by C. Renfrew and I. Morley, pp. 50-60. Cambridge University Press, Cambridge.

Richter, D., J. Waiblinger, W. J. Rink and G. A. Wagner

    2000   Thermoluminescence, Electron Spin Resonance and 14C-dating of the Late Middle and Early Upper Palaeolithic Site of Geissenklösterle Cave in Southern Germany. *Journal of Archaeological Science* 27:71-89.

Rohrer, T.

    2004   Race-baiting, Cartooning and Ideology: A Conceptual Blending Analysis of Contemporary and WWII War Cartoons. In *Ideologien zwischen Lüge und Wahrheitsanspruch*, edited by S. Greschonig and C. S. Sing, pp. 193-216. Deutscher Universitäts-Verlag, Wiesbaden, Germany.

    2005   Image Schemata in the Brain. In *From Perception to Meaning, Image Schemas in Cognitive Linguistics*, edited by B. Hampe, pp. 167-196. 29 ed. Cognitive Linguistics Research, R. Dirven, R. Langacker and J. Taylor, general editor. Mouton de Gruyter, Berlin.

Sackett, J. R.

    1985   Style and Ethnicity in the Kalahari: A Reply to Wiessner. *American Antiquity* 50(1):154-159.

Sahlins, M.

    1985   *Islands of History*. University of Chicago Press.

Schmitz, R., D. Serre, G. Bonani, S. Feine, F. Huillgruber, H. Krainitzki, S. Paabo and F. Smith

    2002   The Neandertal Type Site Revisited: Interdisciplinary Investigations of Skeletal Remains from the Neander Valley, Germany. *Proceedings of the National Academy of Science* 99(20):13342613347.

Sekaquaptewa, E. and D. Washburn

    2004   They Go Along Singing: Reconstructing the Hopi Past from Ritual Metaphors in Song and Image. *American Antiquity* 69(3):457-486.

Settis, S.

    1978   *Giorgione's Tempest, Interpreting the Hidden Subject*. Polity Press, Cambridge.

Silliman, S. W.

    2001   Agency, Practical Politics and the Archaeology of Culture Contact. *Journal of Social Archaeology* 1(2):190-209.

2005   Culture Contact or Colonialism? Challenges in the Archaeology of Native North America. *American Antiquity* 70(1):55-74.

Slingerland, E. G.
2005   Conceptual Blending, Somatic Marking, and Normativity: a Case Example from Ancient Chinese. In *Cognitive Linguistics*, pp. 557-584. vol. 16.

2008   *What Science Offers the Humanities, Integrating Body and Culture.* Cambridge University Press, New York.

Spicer, E. H.
1962   *Cycles of Conquest.* The University of Arizona Press, Tucson.

Stein, G. J.
1999   *Rethinking World-Systems: Diasporas, Colonies, and Interaction in Uruk Mesopotamia.* University of Arizona Press, Tucson, Arizona.

Straus, L. G.
1992   *Iberia Before the Iberians.* University of New Mexico Press, Albuquerque.

Stringer, C.
2001   Modern Human Origins -- Distinguishing the Models. *African Archaeological Review* 18(2):67-75.

Stringer, C. and W. Davies
2001   Those Elusive Neanderthals. *Nature* 413:791-792.

Sweetser, E.
2000   Blended Spaces and Performativity. *Cognitive Linguistics* 11(3/4):305-333.

2004   'The Suburbs of Your Good Pleasure': Cognition, Culture and the Bases of Metaphoric Structure. In *The Shakespearean International Yearbook 4: Shakespeare Studies Today*, edited by G. Bradshaw, T. Bishop and M. Turner, pp. 24-55. Ashgate, Burlington, Vermont.

Talebinejad, M. R. and H. V. Dastjerdi
2005   A Cross-Cultural Study of Animal Metaphors: When Owls Are Not Wise! *Metaphor and Symbol* 20(2):133-150.

Tattersal, I.
1997   Out of Africa Again . . . and Again? *Scientific American* 276(60-67).

Templeton, A.
2002   Out of Africa Again and Again. *Nature* (416):45-51.

Thomas, J.

    1993   The Hermeneutics of Megalithic Space. In *Interpretative Archaeology*, edited by C. Tilley, pp. 73-97. Berg Publishers, Providence and Oxford.

Tilley, C.

    1999   *Metaphor and Material Culture*. Social Archaeology. Blackwell Publishers, Oxford.

Trinkhaus, E., O. Moldovan, T. Milota, A. Bilgr, L. Sarcina, S. Athreya, S. Bailey, R. Rodrigo, G. Mircea, T. Higham, C. Ramsey and J. van der Plicht

    2003   An Early Modern Human from the Petera cu Oase, Romania. *Proceedings of the National Academy of Science* 100(20):11231-11236.

Tuchman, B. W.

    1978   *A Distant Mirror*. Ballantine Books, New York.

Turner, M.

    2003   Double-Scope Stories. In *Narrative Theory and the Cognitive Sciences*, edited by D. Herman, pp. 117-142. CSLI, Stanford.

    2006a   The Art of Compression. In *The Artful Mind*, edited by M. Turner, pp. 93-113. Oxford University Press, New York.

    2006b   *The Artful Mind*. Oxford University Press, New York.

    2006c   Compression and Representation. *Language and Literature* 15(1):17-27.

    2007   The Way We Imagine. In *The Imaginative Mind*, edited by I. Roth, pp. 213-236.

van Andel, T. H. and W. Davies (editors)

    2003   *Neanderthals and Modern Humans in the European Landscape During the Last Glaciation: Archaeological Results of the Stage 3 Project*. Oxbow Books, Oxford.

van Andel, T. H., W. Davies, B. Weninger and O. Jöris

    2003   Archaeological Dates as Proxies for the Spatial and Temporal Human Presence in Europe: a Discourse on the Method. In *Neanderthals and modern humans in the European landscape during the last glaciation*, edited by T. H. van Andel and W. Davies, pp. 21-29. McDonald Institute for Archaeological Research, University of Cambridge, Cambridge.

van Dommelen, P.

    1997   Colonial Constructs: Colonialism and Archaeology in the Mediterranean. *World Archaeology* 28(3):305-323.

Vialou, D.

    1986   *L'Art des Grottes en Ariège Magdalénienne*. Gallia Préhistoire XXII. Centre National de la Recherche Scientifique, Paris.

Wagner, M.

    1998   Some Think It Impossible to Civilize Them at All: Cultural Change and Continuity Among the Early Nineteenth-Century Potawatomi*. In *Studies in Culture Contact: Interaction, Culture Change, and Archaeology*, edited by J. G. Cusick, pp. 501. Southern Illinois University, Carbondale.

White, R.

    1992   BEYOND ART: Toward an Understanding of the Origins of Material Representation in Europe. *Annual Review of Anthropology* 21:537-64.

    1997   Substantial Acts: From Materials to Meaning in Upper Paleolithic Representation*. In *Beyond Art: Pleistocene Image and Symbol*, edited by M. Conkey, O. Soffer, D. Stratmann and N. Jablonski, pp. 93-121. Memoirs of the California Academy of Sciences. vol. 23, N. G. Jablonski, general editor. California Academy of Sciences, San Francisco, California.

    2001   Personal Ornaments from the Grotte du Renne at Arcy-sur-Cure. *Athena Review* 2(4):41-46.

    2003   *Prehistoric Art, the Symbolic Journey of Humankind*. Harry N. Abrams, New York.

Wiessner, P.

    1983   Style and Social Information in Kalahari San Projectile Points. *American Antiquity* 48(2):253-276.

Wilkie, L.

    2000   Culture Bought: Evidence of Creolization in the Consumer Goods of an Enslaved Bahamian Family. *Historical Archaeology* 34(3):10-26.

Wilkie, L. and P. Farnsworth

    1999   Trade and the Construction of Bahamian Identity: A Multiscalar Exploration. *International Journal of Historical Archaeology* 3(4):283-320.

Williams, M.

    2003   Growing Metaphors. *Journal of Social Archaeology* 3(2):223-255.

Williams, R. F.

    2004   *Making Meaning from a Clock: Material Artifacts and Conceptual Blending in Time-Telling Instruction*, University of California, San Diego.

Wiseman, R.

  2007   Ancient Roman Metaphors for Communication. *Metaphor and Symbol* 22(1):41-78.

Wobst, H. M.

  1977   Stylistic Behavior and Information Exchange. In *Anthropology Papers: Papers for the Director: Research Essays in Honor of James B. Griffin*, edited by C. E. Cleland, pp. 317-342. vol. 61. Museum of Anthropology, University of Michigan, Ann Arbor.

Young, M.

  1988   *The Metronomic Society*. Harvard University Press, Cambridge, Massachusetts.

Yu, N.

  1998   *The Contemporary Theory of Metaphor, A Perspective from Chinese*. Human Cognitive Processing. John Benjamins Publishing Company, Amsterdam/Philadelphia.

Zbikowski, L.

  2006   The Cognitive Tango. In *The Artful Mind*, edited by M. Turner, pp. 115-131. Oxford University Press, Oxford, New York.

Zerubavel, E.

  1981   *Hidden Rhythms, Schedules and Calendars in Social Life*. The University of Chicago Press, Chicago and London.

Zilhão, J., D. Angelucci, E. Badal-Garcia, F. d'Errico, F. Daniel, L. Dayet, K. Douka, T. Higham, M. Martinez-Sanchez, R. Montes-Bernardez, S. Murcia-Mascaros, C. Perez-Sirvent, C. Roldan-Garcia, M. Vanhaeren, V. Villaverde, R. Wood and J. Zapata

  2010   Symbolic Use of Marine Shells and Mineral Pigments by Iberian Neandertals. *Proceedings of the National Academy of Sciences* 107(3):1023-1028.

Zilhão, J. and F. d'Errico

  1999   The Chronology and Taphonomy of the Earliest Aurignacian and Its Implications for the Understanding of Neandertal Extinction. *Journal of World Prehistory* 13(1):1-68.

  2003   An Aurignacian "Garden of Eden" in Southern Germany? An Alternative Interpretation of the Geissenklösterle and a Critique of the Kulturpumpe Model. *Paleo* 15:69-86.