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Forward

“ Petrification is another method of preservation of both plant and animal remains. This can occur in several ways... Mineral matter from underground water may be deposited in the interstices of porous materials... The original material may be entirely replaced by mineral matter, molecule by molecule, so that the original appearance and the microscopic structure are retained, as in petrified wood.” The Columbia Encyclopedia, Third Edition.

Piece by piece, the illuminated certainties of our youth are replaced by the fluorescent-lit co-payments and IRS forms and mundane mucilage of middle age. This replacement, a kind of calcification can be gradual and nearly unnoticed- until one catches a breath and realizes that this is the reality of the present.

I, too, had passed from my twenties and thirties and even forties into ersatz, reluctant middle age like the rest of my generation. Yet the knowing disquiet, about the replacement of the beliefs of youth with those of middle age, became louder, a mosquito buzzing angrily in the back of my head. Like most mosquitoes, this was one I could not help scratching. But the fever this one conferred was intellectual rather than malarial. It sapped my time and attention and got the better of me entirely: I started writing this book.

I was acutely aware that my era had traversed the trajectory from the uneasy fake hippiedom of the late 1970s to various levels of membership among the pillars of the establishment. I knew that our beliefs had changed, but how had this taken place ? Why was it impossible, or often derided or highly problematic, to “participate in the system” in the morose dregs of the

early 1980s, when it had become effortless and mandatory by 2000 ? What happened to the deep emotional pull that ideology had once evoked in my generation ?

First, the giants of the past had been shrunken and become brittle. For the larger part of a century, Freud and Marx had been thinkers of immense stature. During this time period, the permanence of the Cold War had been enduring. Yet they no longer spoke to us. During our lifetimes, beliefs in their singular significance together and separately have failed. With Marx this process has occurred by disgrace, as the Cold War has endured the near-forgetting that it happened. Freud's sagacity, flawed as it was, has been replaced by the explosive growth of neuroscientific and information-processing rather than psychoanalytic explanations.

Intellectual adherence to the significance of these thinkers was not the only shift. The collapse of their emotional pull for large cohorts could be answered by ageing or the maturation of their former adherents. Yet it was deeper than that as well. Our underlying beliefs had changed in what clearly might be called a paradigm shift, so significant and deep that it was hard to notice that we were now breathing different air.

This book is concerned with the world that began to wrap up its ending at the start of the 1990s, and concludes chronologically in the historical sweet spot around the year 2000.

Out of the Closed World: how the Computer Revolution helped to end the Cold War is indeed a scholarly and an historical work. However, my intentions transcend objective historical argument. The text is intended to grasp at the feeling that we once had, the sense of the universe and its moral thunder and hailstorms and deep fears and thrills. This work is indeed a

bildungsroman. Yet the author is too private to write a personal account, and the personal references will be largely relegated to this Forward, to the Coda, and to footnotes. I will attempt instead to explain how experience and facts became history, to write a memoir writ large of my generation.

And we begin this book, as so many stories begin, with the words:

" A long time ago, in a far-away land..."

Preface

1. The Nature of the Pretzel: What this Book is About

Out of the Closed World: How the Computer Revolution Solved the Two Cultures Conundrum describes the tying and subsequent tightening of one of the tightest and most intractable intellectual puzzles in history. This was the pair of mutually alienated estranged cultures of the arts and the sciences in the Twentieth century. This book studies the elite intellectual culture of the mid- and late Twentieth century, the nature of its increasingly claustrophobic worldview; the rise of the technical-scientific culture of the Cold War; the estrangement of the arts and sciences and their parallel progress through several decades of the century; and the sudden events that solved this mutual distance at the conclusion of the Twentieth century.

Prior to the Second World War, Western elite culture was frequently both anti-business and anti-scientific. The Cold War only strengthened elite arts suspicion of the new technical wonders being created in the service of war. Scientific-technical and artistic elites respectively proceeded in parallel tracks through the 1960s, 1970s, and 1980s. Both cultures were well-established, populated with erudite and intelligent people, and comfortable in their assumptions. But the incredible events of the end of the 1980s turned the assumptions and certainties of the world on their head, and offered an opportunity to wholeheartedly join the business and technological world. The Cold War concluded, with astonishing lack of violence. In an unrelated series of events based on the natural progress of computing, the World Wide Web was invented

and rapidly commercialized. The result of that development was a tremendous burst of entrepreneurial creativity from every facet of the business, arts, and scientific community. This in turn made the recent historic artistic elite antipathy to technology and business seem even more stale, musty, and antiquated.

Thus, in a genuine case of *deus ex machina*, the computers of the Cold War saved us from the closed intellectual world of mid-century. The closed world of the Cold War at first exacerbated, and then solved the schism between art and science.

2. Themes

Several Meanings of the 'Closed World'

This felicitous phrase has been used more than once—at least twice in the history of philosophy and science; in AI computing; and in each case it is the right phrase.

Philosopher Alexandre Koyre (1958) used it to indicate the beliefs of medieval Christendom, in which pervasive and ubiquitous theology ruled out any

comprehension of the world as possibly spherical.¹ The world could not, in this *gestalten*, be spherical because then it would be difficult to comprehend morally- since God would not be located in the Heavens. Science opened this closed world into "an infinite universe" in which the Earth revolved around the Sun, and in which theological reality was not imminent in the structure of the solar system.

In the formal logical languages which fuel Artificial Intelligence computing, the 'Closed world Assumption' means that particular logical statements (referred to as logical formalisms) about a given fact constitute the entire universe.² This is a necessary simplifying assumption in formal logic.

What AI states in formal logic, science studies scholar Paul Edwards indicates tangibly but not

¹ "...I have endeavored in my *Galilean Studies* to define the structural patterns of the old and the new world views and to determine the changes brought forth by the revolution of the 17th century. They seemed to me to be reducible to two fundamental and closely connected actions that I characterized as the destruction of the cosmos and the geometrization of space, that is the substitution for the conception of the world as a finite and well-ordered whole, in which the spatial structure embodied a hierarchy of perfection and value, that of an indefinite or even infinite universe no longer united by natural subordination, but unified only by the identity of its ultimate and basic components and laws and the replacement of the Aristotelian conception of space - a differentiated set of innerworldly places- by that of Euclidean geometry- an essentially infinite and homogenous extension- from now on considered as identical with the real space of the world. " Koyre, viii.

² According to the Closed world assumption in AI, what is not known to be true is false. this is a limiting and simplifying procedure that is opposed to the OWA, what is not known to be true is not necessarily false.

formally. Edwards' well-received The Closed World depicts the claustrophobic certainty of the defense research environment in the Cold War.³ In a closed world, the opportunities for dissent are exceedingly limited, and "talking outside the box" is in itself difficult. The necessity and urgency of the Cold War's intense military development was almost impossible for the Cold Warriors to see out of. This definition in itself is ironic- obviously self-consciously on Edwards' part- in that the closed world in his designation was the scientific and technological one, whereas in Koyre the closed world was pre-scientific.

This author's usage of irony is different. The Cold War's technological environment was a closed world. So, too, was the arts and literary environment. The mutual closedness [sic] certainly underscores the identity of this cultural morphology as a Gordian knot that could not be untied, but could only be cut.

Caveats are in order, both here and in the larger text. In significant respects, the Closed World of the 20th century was far less closed than that of Medieval Christendom. There was some social and cultural interaction between scientific and cultural elite, especially and increasingly in the SF Bay Area in the 1960s and 1970s. Yet the further one got to the center of the cultural cohort and the scientific cohort respectively, the more cultural purity, so to speak, made their mannerisms mutually unintelligible. Some people played both sides by expressing anxiety about the hazards of nuclear weapons or computation: J.R. Oppenheimer and Norbert Wiener respectively come to mind. In the later part of the Closed World period, the counterculture, particularly in the San Francisco Bay

³ Paul Edwards, *The Closed World: computers and the politics of discourse in Cold War America*, 1996.

Area, helped to contribute to the movement toward more usable computers. Finally, neither of these circles was half as closed as the technological environment of the Soviet Union, or its society.

The End of History

" While some present-day countries might fail to achieve stable liberal democracy and others might lapse back into other more primitive forms of rule like theocracy or military dictatorship, the ideal of liberal democracy could not be improved on." ⁴(Fukuyama 1992, p xi).

A study of the conclusion of the Cold War is incomplete without invoking political scientist Francis Fukuyama's concept of the "End of History",⁵ occasioned by the collapse of Western idealism. In broad outline, Fukuyama argued that once liberal democracy was widely achieved, and even began to be universalized with the end of the Cold War, the most longstanding and consequential struggle of history was over. My study certainly corroborates Fukuyama's theory of the end of the Soviet Union as the conclusion of a distinct historical era. However, this author is more concerned with the role of technology in ending history than the Soviet God that failed to end history.

The idealism of 19th-century Marxism had gone from ripe to rotten; what was indeed needed was a cathartic purge of this characteristically unhealthy obsession in our political consciousness. But the purge of Western Marxism was also the overwhelming of political idealism by the romance of technology. In fact, reading Western Marxists bemoaning the failure of their movement it seems that they did not know what hit them, and did not anticipate the computer revolution's great dimensions.

⁴ Fukuyama 1992, p xi.

⁵ Francis Fukuyama, *The end of history and the Last Man*, 1992.

Generally, computer science history has been sufficiently occupied with the exposition of its own events that it hasn't considered its own immense import in political movements. Political science history has been obsessed with the big story-capitalism, socialism, and the triumph of liberal democracy, and as such has not seen the implicit growth of a different sense of history itself in tech circles. In computing, and in the large world of the technically oriented, the overriding fascination of the past century has been the triumph of computers and their adjustments to the needs of humanity.

Fukuyama said, that history would go on but that it would not mean very much, essentially. He did not, notably, say anything contrary to common sense, such as stating that events would cease to take place. Directional, or teleological history in the sense stated by Hegel and Marx and refined in political science and philosophy since Early Modern Europe, was over once the Cold War ended. What we wanted to call it after that was not so important- because the import of such events would have to be re-evaluated under new historical auspices. Destiny achieved: Now what ?

The Biography of a Generation: A Story of Elites

The biography of the intellectual concomitants of the Cold War is as well the biography of my generation. This book's identity as a bildungsroman is not buried very deeply. Writing this book, the author's fifty-something self revisits her college days at Columbia University. Columbia and the Ivy League were admittedly elite. Fortunately, the world is far more egalitarian than it used to be. However, the Ivy League continues to be immensely influential, if less so than thirty years ago.

Omissions by Design

This work is not a general history, but a specific one making an argument about the way that the Cold War's intellectual world was structured, so to speak, and how it concluded. In so doing the book cuts a wide swathe. We sweep in a broad range, but our concerns are not universal. Our account does give short shrift to the larger portion of American society- to Middle America, to the underclass, and to ethnic minorities. We are concerned with several inordinately pivotal elites. There is not that much about popular culture, which was affected by the elites much more than it affected them. This was not a good thing- the insularity of both the artistic elite and the technocratic elite made the former more precious and conceited, and the latter inordinately self-confident even as it designed nuclear weapons systems. Both elites became far less insular- less elitist, that is- in the early 1990s, as a function of the end of the Cold War. The current debates over economic elitism and the inordinate wealth of the financial sector ignore the relatively egalitarian culture that has been wrought by popular computing, particularly mobile computing.

We pay less attention than we might to economic changes that brought about cultural movements at a more deliberate pace. Despite the decline of standards of living in the American working class, and of welfare state benefits, the appearance of increasingly flexibility in the workplace and of more women and minorities therein as well, weakened the moral intensity and outrage of the American New Left. But the Left could not disappear until the Soviet Union collapsed and the Cold War itself ended.

This is a history, but it is sculpted to cover various topics rather than intended for encyclopediac

purpose to address everything. Some things are emphasized heavily, while other factors are admittedly given short shrift. This is strategic and self-conscious, and not because I don't think that the women's movement, decline of the American union worker, 60s cultural revolution, are not significant.

Likewise, the Computer revolution was not really realized until the Internet was universalized and commercialized. As we say this, we nod to the future: there is no "finally" with the computer revolution. There is no end, nor is there even an end of the beginning. There is no end of history either, but a pause and a segue was certainly reached with the sheer gravity of end of the very stubborn and persistent Communist dream.

The Ascendency of the United States

As long as this was the intellectual structure of the world, the USA would continue to be culturally subservient despite its creativity. The Computing Revolution- firmly based in the United States rather than in England or Europe- brought America into its own, finally surpassing the elitist and aristocracy British-based contempt for technology.

A Unified Technological and Political History

This work also contributes to a need which was less urgent a decade or two ago. Now that political history seems to be greatly influenced by, if not subsumed by, the history of information technology, a unified history of the conclusion of the Twentieth century can be written. There is no surprise that it has not been unified: the history of the computer, however well written by its erudite advocates, has been mostly expository simply because of the volume of data entailed. The historians of political theory have had to incorporate the knowledge of the end of history, as

they knew it. However, in this study we essay to pay equal homage to two distinct and immensely consequential lineages of events.

3. Outline of the Chapters

Our narrative is indeed just that- a narrative. The puzzle that we wish to witness solved is that of two disparate strands of Western, especially American culture in the past century. We would like to see how they became estranged and how this estrangement was resolved. We discuss the manner in which a peculiar set of circumstances put this situation in place- not only in place, but painfully stuck in place like a key that breaks in a lock.

The Modernist intellectuals found their perfect foil in the Cold War. It allowed them to keep complaining without actually being part of a society and economy that were indeed intimidating and in which there were indeed innumerable problems. However, the abstinence of many capable individuals from scientific policy, from the business world, from politics, from pop culture, in turn did none of those fields any favor. All of the latter were enriched greatly when the end of the Cold War changed American society as well as the moribund Soviet empire.

For this dynamic to be initiated, and for this dynamic to continue, the Cold War was itself needed. For this dynamic to finally be completed, the Cold War had to end fully and definitively. Moreover, there had to be something else for its former adherents to devote selves to. The steps of the ghastly sequence were necessary, and the knot required this condition to be satisfied before either of the strands could be relaxed. The steps were however, neither arbitrary nor easily retraceable once begun. As these steps were taken, the most mammoth and horrible Rube Goldberg

contraption in history was put into place (Chapters One and Two).

Once we present the Cold War and the Gordian Knot of the arts and sciences schism, we can discuss the Western artistic and technical elites, in that order. We describe the fundamental beliefs of the Western elites in the early Twentieth century. These beliefs were heavily indebted to Freudian introspection- both individual amateur and professionally helped through psychotherapy or psychoanalysis; and Marxian political philosophy, which made fully renouncing admiration of the Soviet Union difficult despite its salient failings. The elite literary, political and artistic community which formed in the second quarter of the twentieth century set the stage for itself in the next half-century. This culture was deeply concerned with both politics and psychology; it cultivated, respectively, the wisdom of Marx and Freud in these fields. It looked toward them too faithfully; these thinkers contributed to an overall aesthetic that was distrustful of all business and of politics and technology (Chapter Three).

In a parallel history, the Cold War saw the greatest development of scientific and technological might to ever accompany a political struggle. The American and world scientific elites differed immensely in their intense patriotism, excitement about the future, optimism and belief in the ability to create a better world. It should come as no surprise that the Cold War, that great power struggle between the Soviet Union and the United States of America, did not mobilize the western arts elite. On the contrary, the development of a scientific and technical elite in the service of the United States' defense during the roughly forty-odd years of the Cold War further entrenched the western elite's insularity (Chapter Four).

Belief in Marxism was weakened but not aborted by the beginning of the Cold War. Instead, the elites remained wary of politics and business, considering both faintly tainted by the compromise of 'the System'. Not surprisingly, they were also often nihilistic in artistic and literary expression throughout the Eighties. Elsewhere in the United States and the Western world, this culture engendered and allied itself with numerous other cultural movements: anti-Colonial sentiment, Modernist art and architecture, post-Modernism in literary and artistic work, and the New Left and community-based New Leftist politics. Meanwhile, the progress of the scientific and technical elite was marked by a string of astonishing, unprecedented achievements (Chapter Five).

These two cultures could not have been further apart in apparent attitudes about the world. The 'Two Cultures' problem, as Cambridge professor C.P. Snow called it in his 1959 essay, was breached only by two massive world-historical events. Their differences were resolved only when two major events took place. These were the nearly simultaneous fall of the Soviet Union and its puppet states; and the explosion of popular computing into the realm of access of the average person in the developed world. Both events took years to culminate, following in a rapid denouement; both took place from 1989 through the early 1990s (Chapter Six). These events resulted, in brief, in the massive demilitarization of the United States economy and political environment; the apparent forgiveness of big business and computing technology by the American elite; and a flood of talent and creativity into the field of computer applications (Chapter Seven).

Grand historical conflicts can be, with some care, traced backwards a good ways. The Gordian Knot of the

Twentieth century is no different. We will briefly trace its provenance, so to speak, and then return to its appearance among the multifold sorrows of 1945.

Chapter 1. The Cold War forms the Frame of the World

1. Introduction: Mis en Scene, the Postwar Years

2. The Shock of 1945

3. The Stage is set

4. Conclusion: the Fact of the World

1. Introduction: Mis en Scene, the Postwar Years

Once upon a time- during the childhoods of middle-aged readers of this book, and that of the parents of the younger readers- the world was more stable. The identities and roles of the powers that be, as quaint and bizarre as it may seem now, were at least fixed. Glancing at the skeletal structure of its geopolitics, this is not surprising. One overriding feature- the "eight-hundred-pound gorilla in the room"- commands our attention. This was the existence of the Cold War, that ongoing armed conflict between the USSR and the USA. In this light, the stability is not surprising: there is nothing like terror to keep people quiet.

The weaponry involved in the Cold War was both more centrally controlled and more overwhelmingly deadly than the relatively chaotic weapons regime of today. The spectre of the detonation of the atomic bomb also fundamentally distinguishes this time period. The Cold War provided an explanation for a great warehouse of social phenomena: the militarization of the United States, numerous ongoing ancillary conflicts such as the Vietnam War; the mystery of the closed-off Soviet world, undoubtedly frightening; and the innumerable physically closed locations in the United States and even more in the Soviet world. Polarization around the Cold War mobilized, altered, and set into *rigor mortis*, everyone and everything else.

2. The Shock of 1945

- intro quote re failed states from FP 2012 cover story;

Thinking of the scenario of devastation, refugees, internment camps and the like, today thoughts immediately turn to Somalia, Afghanistan, Sub-Saharan Africa, or the adjacent border of Myanmar. As *Foreign Policy* magazine puts it, the central features- of 'failed states' are those of a continuous war- against other nations, and ongoing internal civil wars of the country against itself, a "war of all against all" to use Thomas Hobbes' words from the *Leviathan*.⁶ The police do not protect, the Army is venal and powerful, markets are barely existent and are not free, and the environment is in a state of collapse. There are large numbers of displaced persons, who struggle to reach refugee camps and then overstay their wretched welcome. This is what we are used to seeing- from the safe distance of news and in magazines- in a few troubled regions of the world.

As hard as it is to fathom, in 1945 the Levant and Ethiopia were relatively untouched by the war. It was the developed West and Japan that had been left in shambles. The Second World War was a war at home, in the hearth of Western civilization and security and in Japan, Asia's exemplar for rapid industrialization and urbanization. The War had been where we think of as safe, but which was now pocked with rubble, battlefield, ruined farms and factories, and imprisoned human beings.

⁶ "Failed states: the 2011 Index". *Foreign Policy*, July/August 2011, p49. The twelve indicators include brain drain; the existence of refugees; demographic pressures; inequality; wretched public services; factionalized elites; poverty and economic decline; and the equivocal legitimacy of the state.

Vast areas of Europe lay destroyed. According to J.M. Roberts' *Twentieth Century*:

" Europe had suffered more physical damage than any other continent, and the cost of the war's direct destruction has never been accurately measured. One estimate is that 7.5 million dwellings had been destroyed in Germany and the USSR alone. Of the unhappy peoples of those two countries it is likely that some 25 million died, half perhaps as a direct consequence of fighting or as prisoners of war... In stricken countries those who survived camped amid ruins..." ⁷

Japan was not better off. The firebombing of Tokyo—a city built of wood, and the obliteration of Hiroshima and Nagasaki by the atomic bombs dropped upon them, meant that the intensity of destruction, if not its geographic scale, was equal to that in Europe.⁸ In London, the fact that Axis power soldiers had never actually landed in Britain did not help. The endless series of German air raids known as the Blitz had, over years, wrecked the country, the economy, and especially London. People lived in cellars, sometimes for years at a time. Eggs were rationed—again for years. Even the normalcy of civilian life was deprived, as David Kynaston tells in terrible detail in *Austerity Britain 1945-1961*:

" Britain in 1945. No supermarkets, no motorways, no teabags, no sliced bread, no frozen food, no flavored crisps, no lager, no microwaves, no dishwashers, no formica, no vinyl, no CDs, no computers, no mobiles, no duvets, no Pill, no trainers, no hoodies, no Starbucks."⁹

And despite this, the worse fact is that England was the victor in the war. The Continent was worse. Great

⁷ J.M. Roberts, *Twentieth Century: The History of the World 1901 to 2000*. 1999, p437.

⁸ John Hershey, *Hiroshima*. Walker, p65 re status quo of Japan;

⁹ David Kynaston, *Austerity Britain 1945-1961*. p19.

numbers of people moved through the ruined landscape, as soldiers, former prisoners of various sorts, and refugees, and in various combinations of these categories. More men and women served in uniform than at any time before or since. The first of these groups began to diminish rapidly:

" Returning the troops to civilian life almost as fast as the United States, the Red Army shrank from the 1945 peak of almost 12 million to 3 million men by 1948."¹⁰

The second group was enormous even by the understanding of 2012. Eleven million people were refugees, renamed 'displaced persons' as if that made it less horrific.¹¹ Countless civilians all over Europe and Japan were put into limbo by the destruction of their homes. Finally, population displacements were not by any means concluded by the end of the war. During the decade following 1945, at least ten million ethnic Germans left Eastern Germany or the nations of Eastern Europe both of their own volition and through deportation.¹² Hundreds of thousands of Poles from western Poland, removed from their homes and sent to Kazakhstan early in the Soviet occupation of that

¹⁰ Walker, p45.

¹¹ Roberts, J.M. *Twentieth Century: The History of the World 1901 to 2000*. 1999, p437.

Mark Mazower, Dark Continent Europe's Twentieth Century. New York: Alfred A. Knopf, 1999.

p215 quotes re #s of refugees;

Judt book- about fifteen pages of the different movements of people- within the Axis powers and then who stayed where and who fled when it was over;

¹² Roberts 1999, p438. More would continue to leave Eastern Germany until the Berlin Wall finally stanchd the bleeding of people walking from East to West Berlin, or simply fleeing by taking the subway, in 1961.

country, were allowed to return- homeless but having been spared any of the war's other violence.¹³

In a final inventory of the internally displaced and newly homeless, for some North Americans, the 'civilized' Western world was not safe either. Beginning in October 1945, the United States Army began to release the vast majority of the Continental U.S.'s Japanese-American population (94,000 from California and 25,000 from Washington and Oregon), from Manzanar, Topaz, and Tule Lake, and other internment camps. A closely parallel gratuitous tragedy played out in British Columbia and Manitoba.¹⁴

The sheer volumes of people homeless and stateless, or at the least enlisted in an army and far from home, has not been equaled since then. Be it ever so humble, people want their own homes, families, communities, and clothing; and at this time, countless people lacked these things.

3. The Stage is Set

Early in 1945 the Soviet and Allied troops met in Germany, crossing the Elbe River and shaking hands. Predictably, the cordial phase of the relationship did not last very long, as power struggles took over. The German generals surrendered on May 7, 1945. Despite the subsequent four months until Japan, crushed by two nuclear blasts surrendered on September 2, Victory over Japan ("V-J") Day was basically assured. Despite or perhaps because of this state of unsettled shock, the world's remaining military powers moved extremely

¹³ The Endless Steppe.

¹⁴ Ronald Takaki, *Strangers from a Different Shore: a History of Asian Americans*. New York: Back Bay Books, Little Brown and Company. 1989, p379. Also see Michi Weglyn, *Years of Infamy*.

rapidly to establish realms of influence. Like lava coagulating, the molten substance of the world set fast, and set hard in its shape. Germany itself was almost immediately split into four spheres of control,¹⁵ and the Soviets took control of half of Germany, half of Berlin, and all of the Baltic republics, Hungary, Poland, Czechoslovakia, Yugoslavia, and Albania. After some scuffles in the years after 1945, Greece and Austria remained inside the political realm of Western Europe rather than becoming satellite states with Soviet economic and military domination. The Soviets would not move these tanks out for decades, nor would the United States relinquish its own vigilance. Large-scale American military bases, staffed by hundreds of thousands of soldiers remained in Western Germany through the 1990s.

Both superpowers maintained their military capacity, despite reductions from wartime highs of soldiers-at-arms. However, there was more than military preparedness, kept up for far longer than anyone ever anticipated at its very start. The Soviet occupation of Eastern Europe entailed a high level of power over economy and society itself. This was salient because the Soviet system was a strange bird, with central economic planning of the production of goods, which quite predictably resulted in corruption and off-book informal economy.

The Iron Curtain

Moreover, the Iron Curtain, as Winston Churchill's 1946 speech in Missouri famously named it, stopped

¹⁵ American, British, French, and Soviet spheres in the country proper, with miniature parallel divisions in Berlin. These would be joined in the new nation of West Germany and city of West Berlin for the first three powers, and East Germany and East Berlin for the Soviets.

personal and media communication, travel and most trade between Soviet-Bloc nations and the Western world:

" From Stettin in the Baltic to Trieste in the Adriatic, an iron curtain has descended across the Continent... All are subject, in one form or another, not only to Soviet influence but to a very high and increasing measure of control from Moscow." ¹⁶

4. Conclusion: the Fact of the World

The paralyzed state of world became the primary fact as of the middle to late 1940s. Moreover, it would be the status quo or forty-four years. These are the primary and central facts of what the world grew out of starting during the year or two following the cessation of hostilities in 1945. This year is Ground Zero or Year One, from our vantage point. The world begins after the world ends.

Was this world more or less comforting than our own ? Was it less rational- the intense polarization, the ongoing national competition, the fear of the bomb, the severe restriction on international mobility because of the genuine existence of an 'Iron Curtain' ? Or was it more putatively rational because of the unquestioning perception of youth, or because it was simpler and more polarized ?

¹⁶ Walker op. Cit. p40, cites Churchill. The speech was in the Congressional Record.

Chapter 2. The Grand Schism of the Arts and Sciences and the Tying of the Gordian Knot

1. Introduction

Thus the fact of the world was war that was not war, and peace that did not seem like actual peace. The possibility of actual hot war- mediated and ended quickly by nuclear weapons- diminished with the end of the 1940s, but military preparedness, weapons development, and the cultural war of the Red Scare did not cease. Without outright war between the United States and the sphere of Soviet military power, hostility was still salient. The intellectual demimonde and the scientific elite faced off in a state of considerable mutual suspicion, heightened by the power and danger given to the new sciences.

2. The Grand Schism of 'The Two Cultures'

The cultural status quo was as scratchy and uncomfortable and ill-fitting as the military and political status quo was. The same cutting vicissitudes characterized the artistic and scientific cultures during the fifty years following the end of the war. For continuity, we will discuss the birth and collective intellectual biographies of these groups, during the next two chapters.

The contrast between them continues to startle- they make up their own Cold War, as it were. On the one side was the fervor of the science people, the relentless pace of science during these years presented a universe that looked different and took place in new offices and labs and houses. On the other side, and in immense contrast, the languor and frequently the depressive

attitude of artistic culture people strongly contrasts with the scientific world. These cultural cohorts evolved, but did not fundamentally falter for the long years of the Cold War. In fact, they could lament its existence but fundamentally could not extricate themselves from its archaisms while it still went on.

The two cultures fit well into Snow's 'The Two Cultures' distinction, and significantly outlasted the height of the Cold War. Cambridge don C.P. Snow's historical essay, published in 1958 to critical acclaim, presented the general sociological observation of the profound divide between the arts people, who were natural Luddites, and scientists who were neither very concerned with literature nor culturally similar to their artist comrades in any way. Snow (1905-1980) was an historian and his work is relatively informal in tone, and his observations general and sociological, albeit highly informed. Nor did it not suggest inevitable cultural imperative as a scientific law for all scientists and all arts and literary people. In 1963 *The Two Cultures* was published in second edition with a revisited introductory essay. Snow maintained that the USA is the exception, although reading his account an observer might suggest that actually the divide was simply far more salient in England than in the USA. Moreover, Snow may well have skipped Livermore laboratories, the Rand Corporation, and MIT. It is not clear that his exploration of the military-scientific world was thorough in the manner of today's dissertation writer. Regardless, the point remains: there still was a divide, and with it different moods, interests, general historical sense, sensitivities, sense of what was useful.

3. Tying the Gordian Knot

"The Gordian knot: The knot which fastened the wagon of Gordius to the temple. The prophecy was that he who could untie it was

destined to be lord of Asia. It was finally cut with a sword by Alexander the Great."¹⁷ *Bulfinch's Mythology*.

The Gordian knot, Greek mythology informs us, could not be patiently unraveled by those who tried. Its cutting would initiate the succession of a new kingdom in Phrygia. It puzzled the wise, and its only solution was psychological and drastic rather than analytical. What intellect could not solve, a knife could. Such an irrevocable move seems most favorable. Better still: the knot is left to gather dust. It is best if the knot itself becomes irrelevant, and can be carelessly cut rather than painstakingly, and gratuitously, untangled.

Knots may be physical, as in the case of the Gordian Knot. They may also be literal or metaphorical. While rope knots may be cut with a knife, Alexander's act of cutting the knot was bold and indicated his lack of fear or reverence for the antique. Our concern for the Gordian knot of our times is linked to a different sort of metaphorical knot. The opposing and complementary aspects of this period of history could not let each other go. The knot described in this book could not be cut because any movement of one strand tightened the others. The loosening of the antagonism of the arts toward sciences, or the contempt that the sciences often showed the arts, would require major world events to take place first. Only then could the two components could be less opposed, and the separate strands function as one rope, if not merge into a single thread.

By the time that this knot was obvious, it was tied so tightly that it seemed that these two would never meet. The tying and subsequent tightening of one of the tightest and most intractable knots in history: the

¹⁷ *Bulfinch's Mythology*.

mutually alienated estranged cultures of the arts and the sciences in the Twentieth century. At our point of origin- the years immediately following the War- efforts to loosen the knot were simply not helpful. Only sudden events, decades hence, would cut the Gordian knot.

4. Conclusion

In the next two chapters we will see just why this knot was so tightly wound- why the American intellectual elite was so persistently discontent (Chapter Three), as well as why the Cold warriors were among the most vehement of history's scientists for hire (Chapter Four). We will commence by tracing the thread through with the formation of the problems of the Western literary elite, and then with the imposition of the brave new world, and the respective sundering of these societies even further from each other.

Chapter 3. The Agony of the Postwar Intellectuals

1. Introduction: An Angst as Old as Time

2. The Marxian Trap

3. The Freudian Lure

4. Side Effects: The Two Cultures and the World they Wrought

5. Conclusion

1. Introduction: An Angst as Old as Time

If there ever was a petri dish for angst, the brew of intellectual cultures of the second quarter of the 20th century was it. However, the angst did in fact exist before the multiple sources of prospective anguish merged into one ongoing nervous breakdown. The pain was, alas, far older than the existence of anti-depressants.

The cultural vicissitudes between the arts and the sciences reached an extreme point during the postwar years. However, this history has a longer genesis—the cultural suffering associated with the Enlightenment may be as old as utopianism itself. We could probably cite it as the ingrained and permanent agony of the Western world itself.¹⁸ Monotheistic societies appear to be intrinsically teleological and hence set themselves up for profound disappointment in the form of idealistic movements and ideological revolutions. Pondering the question at this depth is a more historically global *gedankenexperiment* than required for our story. But in essence, the division

¹⁸ This rootedness in Mosaic religions seems more plausible in light of the fact that Islamic and especially Levantine societies appear to be particularly 'neurotic' relative to world civilizations, and prone to their own utopian, particularly ascetic movements.

between idealistic intellectual elites and scientific pragmatic ones is primordial.

The formation of the particular mess that the Western intellectual elite found itself in the mid-1900s is of slightly more recent provenance. 'Modern' Western utopianism best seen in the politics of the French Revolution, discussed as such by every political science person in the time. It was Ground Zero for the formation of ideological hopes.

At this point, it is no surprise that Western intellectual elites began to get hopelessly mired in webs of their own making. Erudition got them in trouble rather than allowed them to see their way out of their own problems. We will refer to these as respectively, the Marxian and the Freudian trap. The two intellectual worlds formed cultures unto themselves, were all-encompassing, brilliant and almost impossible to extricate oneself from. As tough as crabgrass, these core beliefs were as firmly held as those of any Jesuit priest on a suicide mission to Japan or Latin America in the 16th century. The union of the two was extremely strong and insidious for reasons we will see in this chapter. Its formation preceded Marx and Freud but was greatly strengthened by the two.

2. The Collapse of the Old Left

The Old Left- that is, the world's Communist parties prior to the Second World War- had taken people in with an intensity that might as well have been the Jesuits in 1600, or the Islamic Fundamentalists of 2001, or heroin. Describing his initiation to and subsequent disenchantment with the Communist Party, Novelist Arthur Koestler writes of his work as a scientific editor in Berlin in the months after Hitler was elected to power.

" I began for the first time to read Marx Engels and Lenin in earnest. By the time I had finished with Feuerbach and state and revolution, something had clicked in my brain which shook me like a mental explosion. To say that one has seen the light is a poor description of the mental rapture which only the convert knows... the whole universe falls into pattern like the stray pieces of a jigsaw puzzle assembled by magic at one stroke." ¹⁹

This experience could only take place in its distilled form through the Thirties, if that late. In 1939, Stalin signed his infamous non-aggression pact with Hitler. The discovery by Western intellectuals that the Marxist-Leninist system was utterly corrupt, venal and violent had been taking place with recognition of increasingly obvious signs on the part of Western leftists throughout late 1930s. In light of the intense sensation associated with the Communist party, this was akin to being woken up with a pail of cold water. This was the straw that broke the camel's back- when the purges and show trials and the Ukrainian famine and insistent refusal on the part of many sympathizers to recognize atrocities had not²⁰. The American Old Left promptly collapsed, with a mass defection from the CPUSA. There were very few holdouts.

As a result, for a short and strange period of time the Soviets and the United States were actually allies.

¹⁹ Crossman, Richard H., ed. *The God that Failed*. New York: Columbia University Press. 1949, 2001. p23.

²⁰ Journalist Walter Duranty, among others, refused to recognize and report on what are now seen as utter atrocities, including the situation among the kulaks and others of the Ukraine. Beatrice Webb, the famed English socialist and Soviet sympathizer, likewise considered true reporting of this situation to be capitalist slander. More recently, Robert Conquest's *The Great Terror* looks head-on at a topic that is hard to not turn away from.

see S.J. Taylor, *Stalin's Apologist. Walter Duranty: The New York Times Man in Moscow*. New York: Oxford University Press. 1990.

It was obvious then, and certainly is clear now, that any such cynical and mendacious alliance could not last very long. Indeed, it did not. Two years later, Hitler broke the pact by attacking the Soviet Union. When that alliance ended with the conclusion of the war, the vast majority of those who had left the Old Left were stuck in no man's land. They were left that way, fretting, pondering, pointlessly scheming, thinking in hypothetical situations, and otherwise stuck for decades.

2. The Marxian Trap

As we saw earlier in this chapter, the intensity of the emotional response to Marxist politics was often overwhelming. And once Marxism had been repudiated, its expiation seemed necessary. The act was tangible and palpable, yet often incomplete. Edmund Wilson's To the Finland Station- still acknowledged this to be a heroic enterprise, explains how the failed enterprise seemed somehow noble at the same time, far more important than the ordinary tasks of life, which prove to be in themselves extremely challenging. Noble failure is no longer considered attractive in any way, but its sense of pain and the purported nobility of the failure of the Marxian endeavor attracted people throughout this period.

3. The Freudian Lure

The effects of Marxism on Western societies was variously polarizing on business and political institutions and invigorating on millions of idealistic people. Marxism invigorated people, into variously useful sometimes dangerous, or sometimes utterly useless pursuits. In contrast, the Freudian essay had a soporific and weakening effect. Belief in the centrality of psychic forces in explaining the psychic character of the present was at best an excellent means for personal growth, in therapy. Unfortunately, just

like Marx, Freudian analysis was as sharp on the destructive effects as it was astringent and enlightening on the positive characteristics. The Freudian lure was quicksand; it could often leave a sensitive individual continually second-guessing oneself.

4. Side Effects: The Two Cultures and the World they Wrought

Like any illness, this pair of cultural phenomena produced corollary co-morbid maladies. C.P. Snow refers to this cohort-intellectuals as natural Luddites, and generally speaking, they were indeed that and more. The cultural traits produced by the unique melange included suspicion of technology and the mass media; deep cultural insecurity sufficient to provoke Americans to take their political and social clues from France, their movies from Japan, and their literature from England.

Such insecurity invites bullies; standing up to and utterly disavowing the worst of the Soviets or the Maoist Chinese regime seemed impossible as well. With or without the atomic bomb, the worldview in total was often nihilistic and self-destructive, lubricated with alcohol, with an emphasis on underemployment, time-consuming psychoanalysis, and literary criticism in lieu of the ubiquitous entrepreneurial work of today.

The cultural insecurity that the Marxian-Freudian cocktail produced resulted in members of the American cultural elite taking cues from France, involving ignoring Stalinism in particular. This culture was deeply concerned with politics and with psychology; it cultivated, respectively, the wisdom of Marx and Freud in these fields. Perhaps it looked toward them too faithfully; these thinkers contributed to an overall

aesthetic that was distrustful of all business and of politics and technology.

5. Conclusion

As this group contemplated the world late in 1945, its apparent options for a constructive future were limited. The Western intellectuals could not accept the viability of capitalism given its obvious extreme weaknesses. At the same time, the bloom was off Communism. This proved to be a box that it was almost impossible to see outside of. This was actually at least as much a closed world as the military Cold War one ! This was indeed a persistent and indeed inescapable theme: it perpetuated its own funk, fretting and pondering and confused and betwixt and between, and hemming and hawing, the world's oldest adolescents, for decades.

In a parallel history, the Cold War saw the greatest development of scientific and technological might to ever accompany a political struggle. The American and world scientific elites differed immensely in their intense patriotism, excitement about the future, optimism and belief in the ability to create a better world. Yet the development of a scientific and technical elite in the service of the United States' defense during the roughly forty-odd years of the Cold War would only further entrench the Western elite's insularity.

Chapter 4. The Brave New World of the Scientific Elite

1. Introduction: the Rules of the World Changed

2. The Social Coalescence of the Cold War's Technocracy

3. Science, the Endless Frontier, Settled

4. The Social Characteristics of the New World

Oppenheimer biography;

1. Introduction: the Rules of the World Changed

" We waited until the blast had passed, walked out of the shelter and then it was extremely solemn. We knew the world would not be the same... Most people were silent. I remembered the line from the Hindu scripture, the *Bhagavad-Gita*, Vishnu is trying to persuade the Prince that he should do his duty and to impress him he takes on his multi-armed form and says: 'Now I am become death, destroyer of worlds. ... We thought of the legend of Prometheus, of that deep sense of guilt in man's new powers, that reflects his recognition of evil, and his long knowledge of it.'"²¹

The words of physicist J.R. Oppenheimer, who viewed history's first atomic blast from a base camp ten and seven-tenths miles away on a high desert plateau in New Mexico, tell us how much this event upended the existing world. As Richard Rhodes' seminal history of the atomic bomb illustrates, the order of nature itself was disturbed. It was not even yet understood how dangerous the blast was; Von Neumann and other scientists and technicians were inadequately distant from the blast, and he and others would develop terminal cancer several years later²². People should not have been able to split the atom, yet it was done. Man

²¹ Quoted in Richard Rhodes, p676.

²² Hermann Goldstine. The Computer from Pascal to Von Neumann. 1976.

had become a natural force in a fundamental manner that had not existed previously²³.

Like the appearance of increasingly rapid digital computation within a year of the Los Alamos blast, this event did not alter the importance or existence of the political struggles to which the literary elite was so keenly alert. However, these scientific events demanded attention as well in a way that the literary elite often would not give it.

The scientific events that helped to set off the Cold War with such intensity, and the immensity of the conflict, consumed the entire lives of the Cold Warriors. These events and the continued devotion to science and technology that they demanded, brought in as well great cohorts of others.

In this chapter we will consider the new generation, a virtually separate nation that sprang forth and grew during the remaining half of the Twentieth century in relative indifference toward the suspicion of the literary elite.

2. The Social Coalescence of the Cold War's Technocracy

The terrible open wounds of the world at the end of the Second World War, as we saw in the last chapter, healed but were not scarless. The movements of people—many of them forever ripped from their homes—was not yet over. It would continue and in fact did so, for two or so years. Even as the human crisis continued, the basic political formation of the Cold War was set by a year or two following 1945. The larger cohorts of

²³ While genomics and nanotechnology seem no less prospectively dangerous, we are clearly far more inured to human alteration of the basic order of chemistry and biology.

G.I.'s left the service and gave force to the G.I. Bill and were parents to the children who made up the Baby Boom.²⁴ Yet the research people barely missed a step. For the scientific and technical world, there was a near-absence of demilitarization. This is in part because the U.S. military research was ready for the ongoing war.

Likewise, the scientific and technical world were shaken and reset within the several years following the war. In this section we will consider its technical ramifications, followed by the complete reorganization of science and technology throughout the USA in order to serve the war effort.

During the summer of 1945, as the war persisted in its dregs in Europe and toward its final conclusion in Asia, America's highest research official Vannevar Bush reported to U.S. president FDR, with his vision of science's role in the future.

3. Science, the Endless Frontier, Settled

Prior to the Second World War, the American policy and attitude toward national involvement in science was as reserved and distant as possible. The United States had not taken up the welfare state in the way that Germany and the Scandinavian nations had, decades earlier. National science efforts were largely limited to the land grant colleges (e.g., Cornell, Texas A&M) and vaccination and public health programs. During the years immediately following the war, Harry Truman's hopes for a United States national health care plan, in the model of the United Kingdom, were disappointed. Far more than the German or Scandinavian governmental models, the American government did not get involved-

²⁴ the PostWar Demographic Bulge.

in science policy as well as in social welfare measures.

During the Second World War, attitudes rejecting government involvement in the economy and technology went the way of pacifism: an unaccountable luxury. From the perspective of the scientist, the mid-1940s afforded no time for such ideological niceties. The Office of Scientific Research and Development, headed by former MIT professor Vannevar Bush, marshalled the resources of universities, new laboratories, and millions of conscripts²⁵. An entire new world of science and technology was ready to be brought into existence, and the war had only clarified how much could be done at a rapid pace, given enough resources. The nominal demilitarization of the research apparatus was only that. Many people went straight from the Office of Scientific Research and Development into para-governmental research facilities, where they worked for life.

The scope of the national effort during the war was enormous. The Office of Scientific Research and Development engaged every form of science that existed at the time. The war effort itself created new ones. Bush witnessed the subsequent growth of the scope of government from its historical limits at public health, into early digital computing, materials, ballistics and other weaponry development, and more furtively, atomic energy.²⁶ The products necessary to continue the defense effort in order to survive the war, and the war after

²⁵ Kaiser, David, ed. Becoming MIT: Moments of Decision. MIT Press, 2010. Also Leslie, Stuart. The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford. New York: Columbia University Press. 1993.

²⁶ Pascal, Z. Bush. biography.

the war, were instead so big in scope that the entire technological world had been swept in.

Most significant for the subsequent transformation of the world were digital electronic computers. These were, at first, needed for ballistics calculations for the war effort. By the late 1940s, they were being lent to meteorological equations, partial differential linear equations (i.e., problems to which many contributory causes modified the ultimate solution), the census, insurance calculations, airplane routing, simple logical problems and eventually hundreds of different problems²⁷.

4. The Social Characteristics of the New World

How the World Felt

In 1950, J.R. Oppenheimer, addressing the winners of the annual Westinghouse Science Talent Search, spoke with immense and infectious optimism:

" I wish you not only the joy of great discovery; I wish for you a world of confidence in man and man's humanity, a world of confidence in reason, so that as you work you may be inspired by the hope that what you find will make men freer and better- in which working as specialists in what may be recondite parts of the intellectual life of the time, you are nevertheless contributing in a direct and basic way to the welfare of mankind." *The Open Mind*, 115.²⁸

The new technological world, and the people who inhabited it, were given energy and motivation by the sheer volume and intense fascination of work they were given to do, and the free rein in actually completing it. We saw that the literary elite continued to

²⁷ Hermann Goldstine, *The Computer from Pascal to Von Neumann*.

²⁸ *The Open Mind*, 115.

struggle for decades with the same problem of a just society and the solution to their own psychological issues. Unfortunately, the solution to the same problem did not present itself for a long time.

While the postwar intellectuals suffered from a surfeit of introspection and reluctance, the scientists rushed in headlong to their novel universe. A whole new world was being conceived, planned, and executed, and it could not have looked more different than the world of the literary elites. It was bright and new and shiny, and especially it first it often appeared jerry-built and had terrible architecture. "Temp" buildings made of plywood and plastic, for instance those at the California think tank SRI, were sometimes occupied for decades. Other buildings constructed for Cold War purposes- notably the Rand Corporation's 1950s headquarters in Santa Monica- lasted as beacons of modernist architecture.²⁹

All was novelty- people, places, fields of study, professions, buildings, materials. Even its weather and its landscapes differed, as if from a wholly different nation. The new technocratic society was populated in places where ivy does not grow naturally, if ever: the remote reaches of the exurbs of San Francisco (Lawrence Livermore, Nasa Ames, and IBM Almaden); at Sandia and Los Alamos in the deserts of New Mexico; in previously industrial and smoky Pittsburgh, reborn as location of the Carnegie Institute of Technology (now Carnegie Mellon University); at Oak Ridge, Tennessee (site of some of the Manhattan Project and subsequent Atomic Energy Commission and Department of Energy facilities);

²⁹ The Lawrence Berkeley Labs hilltop Hall of Science building, constructed in 1968, is dated in 2013. However, its futuristic appearance merited stints in movies such as *Collossus: the Forbin Project* in 1972.

and in the previously small port of San Diego. As the postwar era went on, the institutional Modernist buildings improved. But the waffle material of the ceilings, the fluorescent lights, the ugly concrete, and the long bare hallways persisted.

The Social Order Upended

Universities were reconstructed as well. Higher education had been the province of gentleman C's, sweeping legacy admissions from the handful of prep schools in New England, attention to the *Social Register*, and effete snobbery on a par with England. But the postwar years were an era that could afford no such conceits or pretensions. Following the war, college enrollment jumped, bringing in people who had previously not had a chance at all. It was an extraordinary advance over an earlier era which had offered far less in the way of meritocracy. Education itself changed to accommodate the need for meritocracy over 'breeding'.

Change came from the top, in a brave move by James Bryant Conant, the self-made Wasp president of Harvard, that was destined to eventually throw the Wasps off the top of that heap. The SAT, a flawed merit test, but a merit test nevertheless, was introduced and began to be used en masse, including for admissions decisions to major universities. The tyranny of the SAT, much maligned as it is today, was far better than the overt racism, classism and sexism than had preceded it. The legacy system and closed nature of the major universities was finally eroded, and new universities took on major roles. Still, it would take progressive financial aid policies for the Ivy League in particular to start offering more than a token leg up for women and ethnic minorities.

Still others did not attend college, but for newly technically skilled blue-collar workers, training of any sort of profession was a profound leap forward. Working as one of the very first computer programmers at Oak Ridge, Tennessee's nuclear facility, Herbert Grosch recruited nearly illiterate mostly female residents from the local mountain communities- 'hillbillies' as he described them- who he trained as computer operators.³⁰ In a similar instance of enormous advance despite lack of formal education, Rand engineer Cliff Shaw, the programmer in the trio of Newell Shaw and Simon, was a coauthor of the first AI program, the Logic Theorist.

The Cold War's Culture as Universe

"Oh brave new world that has such people in it !" Aldous Huxley, *Brave New World*. 1932.

If the cultural world of the literary elite had been at home in old buildings, introspection in cafes, and muddled confusion about the direction of society, the intensity and the sheer ardor of this world contrasts entirely in every way. The Rand Corporation's headquarters in Santa Monica was kept open on weekends and evenings for people who wished to stay in the office beyond the clockwork nine to five.³¹ This was such a strange concept at the time that Rand's 1963 report on its research actually explained this practice. Work was often all-consuming, at the expense of civic or political life. A large number of the Cold

³⁰ Grosch, Bit Slices from a Life.

³¹ 1963. *Rand: the first fifteen years*.

Warriors were apolitical, a prudent choice in a period in which politics often involved extremes.³²

Living with the End of the World, or, How I learned to stop worrying and love the Bomb

“The RAND Corporation’s the boon of the world
They think all day long for a fee
They sit and play games about going up in flames
For counters they use you and me.”

“The RAND Hymn” by Malvina Reynolds. ³³

The psychological perimeters of the Closed World had to be concertedly, repeatedly asserted and guarded. While the atom bomb was terrifying by any possible measure, it required jokes rather than a nervous breakdown. Living with the unthinkable, both ordinary people and the technocrats of the Cold War had to absorb and routinize odd and anomalous things- the prospect of nuclear war, fallout shelters and farcial measures such as crouching under desks to hide from the danger- without taking the sheer oddness of it to heart.

As seen in Stanley Kubrick’s 1962 movie *Dr. Strangelove*, the joke was entertaining in the movies. Yet it was disturbing in real life. In a calmer and less pleasant light, the researchers at Rand and other military contractors prepared for the world’s end, and learned to see prospective nuclear disaster as a livable foreseeable future. Rand theorist Herman Kahn, author of On Thermonuclear War (1960), with his immense and obviously unhealthy weight, and pear-shaped

³² Ellen Shrecker’s *No Ivory Tower* discusses the political restrictions imposed by the universities in response to the political crackdown on the American far left.

³³ Abella p9.

profile, underscored the great un-naturalness and twistedness of the nuclear enterprise³⁴. However integrated into the powers of the American military and political establishment the nuclear theoreticians may have been, it is hard to see this aspect as entirely sane. They might as well have been smashing cups at the Mad Hatter's tea party.³⁵

³⁴ See Sharon Ghamari-Tabrizi, The Worlds of Herman Kahn: the Intuitive Science of Thermonuclear War. Harvard University Press. 2005. Also: Kaplan, Wizards of Armageddon.

³⁵ Rand song; Abella, Soldiers of Reason.

Chapter 5. The Conundrum of the Two Cultures: Parallel Tracks through the 1960s and 1970s

1. Introduction: The Cold War Deepens

2. Parallel Tracks in the World of the Arts and the Sciences

3. The Arts: The Sixties and Seventies

4. The Sciences: the Straight-A Culture

5. Conclusion

1. Introduction: The Cold War Deepens

One of history's most mendacious men died in 1953—possibly poisoned by one of his own inner circle and not a moment too soon.³⁶ The almost incomprehensible intensity of Stalin's destructiveness was abated with the ascension of Nikita Krushchev to the leadership of the Soviet Union. However, the historical juggernaut of the USSR-US dynamic continued. The Cold War rolled on, with considerably less domestic vitriolic political excess in both of its major nations.

In the USA, McCarthyism ended, as the American public refused to indict any more obviously innocuous individuals as prospective Soviet spies, in the same general time frame as Stalin's death. The putatively anti-Communist infiltration of the Civil Rights movement continued, as it would for the New Left in the next decade. In the USSR, thousands of innocent political prisoners were released from Siberian prison camps; the wholesale Stalinist terror was abated.

³⁶ In the Court of the Red Tsar.
Also: The Gulag Archipelago, Aleksandr Solzynitzen.

Outside of the major powers of the Cold War, restrictions on political freedom in countries under the US and USSR's influence continued. The other conflicts, playing themselves out in Eastern Europe, Latin America, in defense weapons programs, and in Korea and Southeast Asia, did not stop. East Germany finally undertook the closure of the intra-urban train lines in Berlin, in a vain effort to stanch the persistent flight of East Germans. This did not work, and was followed by the building, virtually overnight, of the Berlin Wall in the spring of 1962. Following the overthrow of the corrupt Batista *CHECK regime, Cuba was no longer a vacation site for gamblers from the United States and instead was reborn as a Soviet satellite nation and would-be military base. The rest of Latin America remained protected under the Monroe Doctrine, by the U.S.' wing, subject to horrifically poor, corrupt, violent, and racist (anti-Indigena) regimes which had nevertheless the merit of not being Soviet Communist satellite nations. In Southeast Asia, internal polarization in Vietnam led to the development of respective regimes loyal to each superpower, and the commencement of a terribly long-running civil war.

2. Parallel Tracks in the World of the Arts and the Sciences

" Neither fear nor courage saves us." T.S. Eliot.

The impasse that cut the elites of American culture in two during the stretch of Postwar years left different but equal impossibilities, with the culture beleaguered on both sides. Fear of the possible viability of the capitalist enterprise did not save the literary world, but instead condemned it to much gratuitous time-wasting and intellectual dead ends. On the other side of the divide, even a great surfeit of courage did not endear the scientific world to the literary one. The intensity and focus of scientific

work inured science to any issues that would slow it down and impede its progress.

The knot was thoroughly hitched. Was it a knot or a noose ? The answer to that depends on which party is being asked. From the perspective of the scientists, it was most thoroughly a knot that could be slipped out of rather easily. Aesthetics were simply marginalized, and the arts were easy to avoid involvement with.

From the perspective of many arts and humanities people, the knot could be practically a noose. It offered the unfortunate opportunity to reject modern technology along with much of business and politics. These things as were accepted were often not welcomed.

3. The Arts: The Sixties and Seventies

The core ideological fundamentals of the artistic elite did not really alter during the Sixties, and Seventies. However- to simplify as is necessary for this study- the larger scope of American society itself altered dramatically. It became more accepting of women, white 'ethnics', Latinos, Asians, and African-Americans, in positions of power. It softened capitalism by allowing more entrepreneurialism, more small businesses, incorporated consumer protection, increased statutory requirements for whistleblowers, family leave protection. The latter in particular was especially noticeable later in the 1970s. This could well be referred to as coercion or window dressing- doubtless, an extension of the coercive and co-optive measures of capitalism according to a Chomskyite sort of New Left analysis. Yet the trend seemed extremely noticeable, and would accelerate considerably in the early 1980s, as we will see in the next chapter.

Notwithstanding the observable changes in the world, the world of the arts elite for a very long time cultivated and continued with its salient proclivities. It created and kept up an entire universe, entrancing and thorough, which one could comfortably inhabit for decades. Much of the attraction of the arts culture was its very weakness. This was a distinct, soulful culture that started out with immense enthusiasm and idealism. Yet following the successive revelations of the evils of the Soviet system, its relevance began gradually leeching out. Over a long period of time, this culture would lose its idealism, becoming cynical, jaded and ultimately very twisted.

The Unease of the World

One salient characteristic was the sense that one could not be at ease with the state of the world, and that complacency or even happiness was a sort of concession. Underlying the great fear that capitalism was wrong was a deeper fear- that not was not the ideal organizational basis for society Communism either- that, too, must be wrong, and that there was some grander societal destiny that could not and would never be achieved. The numerous things that beset this individual perhaps means that it makes sense to have been massively neurotic. The perceived failure of society because of intrinsic limits on good governance- because politics was so harsh, and because the world was still cruel, because participation in business involved innumerable moral ambiguities- led to many cases of failure to even try on the part of individuals. The New Left politics of the 1960s, fenced in and solipsistic, became so extreme as to be highly destructive.

American Political Activism, within Limits

Cultural unease was one thing; socially acceptable demonstration and political activism was another. And revolution was a different species entirely. Fortunately, only a very few people in the United States and the other Western nations went so far as to participate in the extreme groups- the Japanese Red Army, the Bader Meinhof Gang, and the Weather Underground.

Wannabee Continental

The suspicion of America's relatively unalloyed capitalism in turn led to salient insecurity, because we lacked the cultural perfection of Britain or France. This led to much effete snobbery, mixed in with massive and obvious insecurity.³⁷ I am among the people who did not own a television until 1991. Yet I gained conversancy in many things outside the United States, for instance in the oeuvre of every European and Japanese director imaginable. The names can be reeled off: *The discreet charm of the bourgeois*, the early *Un chien andalou*, *The Woman in the Dunes*, Fellini, Kurosawa, Truffaut and Tarkovsky, Von Trotta, Wertmuller, Resnais, Eisenstein, *Rashomon* and *The Seven Samurai*, *Breathless* and the French New Wave. Elbow to elbow with other Columbia undergrads, I sat through screenings of movies which had much posing and no plot. It must be admitted, though, that everyone on screen did indeed look good.

³⁷ The standards for speaking French were so high at my Seven Sisters college that I actually never spoke it outside of the classroom, despite my reading proficiency. To say that as a generation this cohort was alienated from popular culture was a serious understatement. I did not watch a Hollywood movie through the entire 1980s. In my dormitory at Columbia College in 1983, there was practically no television except for some curious examination of the earliest MTV videos.

The Virtues of Underachievement

Quote "Howl" here

If the best minds of the generation were not ruined, many people were far less productive than they could have been. Any tendencies people might have had toward underachievement were made worse. If you want to be an underachiever, there are certainly many ways in which to go about it, and the counterculture in all forms throughout the 1950s (Beatniks), 1960s and 1970s (hippies) encouraged this. The title of Yippie Abbie Hoffman's Steal this Book makes this clear. In any other generation, the author would have found far better ways to spend his time than devising and publicizing new ways to rip off grocery stores.

Practically all such diversions from productive activity seem to have been prevalent at my elite college. There was, for one thing, far too much therapy, in many cases in the time-consuming form of psychoanalysis. As the title character in Woody Allen's historical set piece *Annie Hall* notes, the therapist suggested sessions five times per week for someone who was clearly not particularly disturbed. A great deal of navel gazing and culturally sanctioned drug-taking took place at my Seven Sisters, Ivy League college. Finding oneself could take decades. It often seemed to be endorsed for people who had never actually lost themselves, and who had not misplaced themselves for longer than a month.³⁸

The End of the Future

³⁸ A rare, memorable exception to this culturally sanctioned immaturity was that tall political science major- the preternaturally calm and dignified young man one whose mother was a white American and whose father was said to be Kenyan.

"No future, no future, no future for me". The Sex Pistols.

What a drag this culture was ! It wound itself up and brought itself down into the dumps repeatedly. It is only a hop, skip, and a jump from decadence to madness, and the social criticism of the time nearly made this leap. It's impossible to quantify the ill effects of overindulgence in hallucinogens. Certainly many people find themselves aging poorly because of over-usage of marijuana. The same is true of alcohol, which the arts society tolerated to excess as well. In addition to toleration of and indeed fascination with neurosis,³⁹ much of it simply perpetuated as an indulgence, the far reaches of the arts culture in the 1970s and early 1980s reached a terrible extreme. In *The Politics of Experience* (1970), Scottish psychiatrist R.D. Laing argued the justification even of a good deal of mental illness under the guise of a rational response to the sickness of the world. Another popular work, *The myth of mental illness*, by Thomas Szasz, reached generally congruent conclusions, in more scholarly and less poetic form than Laing.

As civilization attacked itself, in some grand cultural autoimmune disorder, it is easy to say that this started with the utopianism inherent to Western religions. It is harder to say where Marx and Freud signed off in their obligations to account for popular and elite cultural having run entirely run amok. In the United States, this was a 'lost generation' that never really found itself. But worse- its children did not, either. Its grandchildren would- but from the vantage point of the mid-1940s, that was far-off. Stuck at the Finland Station, waiting for a train that was never

³⁹ Sherry Turkle, *Freud's French Revolution*.

going to arrive, we froze in time, as our beliefs were more appropriate to those of fifty years ago.

The intense animosity of the arts people toward the sciences remained, often mutual as well.⁴⁰ Instead, the elites remained wary of politics and often nihilistic in artistic and literary expression throughout the Eighties. Elsewhere in the United States and the Western world, this culture engendered and allied itself with numerous other cultural movements: anti-Colonial sentiment, Modernist art and architecture, post-Modernism in literary and artistic work, and the New Left and community-based politics. With the ongoing existence of the Cold War, and the resources that necessarily needed to be devoted to it, the headache or toothache that this represented continued to fester. Moreover, until the USSR had actually collapsed, it would be unknown. It thus held the reputation of being more glamorous, more just, and less morally abhorrent than it ever was in reality.

4. The Sciences: the Straight-A Culture

The world of the sciences was everything that the world of the arts was not: weak on introspection enthusiastic, forward-looking, happy, unconcerned with appearances and uninterested in altered states of consciousness.

The scientific world became more self-critical, although this did not purchase any further currency for the humanities people. Computer scientist Philip Agre points this out, with great candor:

⁴⁰ Engineering, from the standpoint of Columbia and Barnard College students, was viewed with mild derision, as was politics.

" When I was a graduate student in artificial intelligence (AI), the humanities were not held in high regard. They were vague and woolly, they employed impenetrable jargon, and they engaged in 'meta-level bickering that never decides anything'. My teachers and fellow students were almost unanimous in their contempt for the social sciences..."⁴¹

The author has noticed this in conversations with computer scientists as well, although they have been quite careful about phrasing it more tactfully.

It is interesting that when the author began doing research at Stanford in the mid-1990s, she found that the portrayal of the scientific and technical world was correct. There were indeed an inordinate number of extremely tall ectomorphic white men. Quite a few seemed like the scientist-king of *Colossus: The Forbin Project*, who remained calm under all conditions. This included conditions in which the computer that controlled the U.S. nuke missiles was about to take over. The portrayal is almost laughably consistent in *Colossus*, and *War Games* fifteen years later. It did not feature the same actor, but could very well have.

Aesthetics of the New Scientific World

To employ euphemisms, aesthetics were not the strong suit of the scientific world. When the white shirt and tie rule was relaxed, it slipped downward for the informal sloppy clothing of the hacker, rather than upwards toward the bon vivant stylistic formalisms of GO Magazine. Blue jeans, t shirts, and sweatshirts, often of dubious provenance and cleanliness, prevailed. Nor was cuisine at its best. The largest culinary

⁴¹ p153. Agre, Philip." The Soul Gained and Lost: Artificial Intelligence as a Philosophical Project". In Franchi, Stefano and Guven Guzeldere, eds. *Mechanical Bodies, Computational Minds: Artificial Intelligence from automata to cyborgs*. Cambridge, MA: The MIT Press, 2006: 153-173.

statement of the period appears to have been that luminous green substance Mountain Dew soda- the same color as the letters on a Seventies or Eighties CRT computer screen- accompanied by frozen burritos heated in a microwave oven. There was almost no style to this culture before Steve Jobs came along and brought much-needed aesthetic relief.

The Substance of Scientific Achievement

Yet once one dipped below the style or lack thereof, the substance was substantial indeed. The progress of the scientific and technical elite was marked by a string of stellar, unprecedented achievements, in medicine, genetics, pharmacology, the creation of vaccines and discovery of DNA, the cure of smallpox early in the 1970s. Civil engineering was impressive, if perhaps outshone by medicine and biology as mentioned, and by advances in computing and electronic engineering. While avionics was a field that grew steadily throughout the century, its achievements ascended into space science and reached an ultimate success that we now have been absorbing for decades: sending man to the Moon.

5. Conclusion

The divide between the postwar intellectuals and the technocratic elite persisted but became less acute during the middle decades of the Cold War. As we will see in the next chapter, mainstream business and political culture more attractive. During the 60s, 70s, and 80s, the material structure of society became far more humane and welcomed wider variety of ethnic groups. Granted, 'welcomed' far too strong a word. The real phenomenon of the glass ceiling, the bamboo ceiling, the double standard, and the reality of the token minority, should not be denied. Incredibly,

racial and ethnic caste systems had been basically prevalent during most of the Twentieth century. These were not ameliorated without intense animosity, including such pitched and prolonged fights as the erasure of laws against interracial marriage and the Civil Rights movement to improve the plight of disenfranchised African-Americans.

However, while the Cold War continued, so did many of its fundamental structural features. These included an intense military buildup, with its attendant secrecy; innumerable careers and corporations dependent upon federal contracts, and lacking any necessity of implementation for commercial purposes⁴². Finally, fear and ignorance of the Soviet Union prevailed—accompanied by the impossibility of disavowing it as a fact of life.

Only late in the 1980s did the strong dependence on commercial tech reorient the computer industry. The Two Cultures necessarily persisted, as long as the Cold War survived. The Internet could not have had the same level of impact had the Cold War not ended in close proximity to the time when the Web went commercial.

In Alan Wald's history, *The New York Intellectuals: the Rise and Decline of the Anti-Stalinist Left from the 1930s to the 1980s*—published in 1987— the author is concerned that he will be attacked extremely vehemently for the general frankness of his views. He also clearly still considers the utter failure of the Soviet Union to be no impediment to the concept of Marxist-Leninism, and to the implementation of "an uncompromising revolutionary vision of social

⁴² Seymour Melman's scholarship on the military economy.

transformation".⁴³ This is how much these people still cared about these issues- which were not yet dead as a doornail. This work was also extremely detailed; American Leftism, both old and new, was immensely wordy, self-involved, and increasingly of very little interest to anyone other than themselves. However, their unique position in American universities, politics, and journalism among other things still meant that they mattered and had a pulpit.

⁴³ "There is simply no panacea for solving the difficulties involved in sustaining during unpropitious times the four major components of Marxist political practice: a rigorous internationalist perspective; and uncompromising revolutionary vision of social transformation; and a determination to view the world from the standpoint of the oppressed groups in society" p373.

Chapter 6. The Eighties: the Widening of American Society and the Lessening of the Cultural Divide

1. Introduction:

Many of the cultural repercussions of the Cold War—the hedonism, nihilism, the early existentialist and Bohemian and Beat movements, agrarian experiments—were motivated by sincere belief. Yet pursuing these dreams was in fact expensive, and thus the cultural movements of the era still benefitted from its sheer wealth, so dramatically greater than the progressive astringencies of the early 21st Century. Employment was relatively easy to come by, and thus easy to denigrate. Housing was cheap, and return to the experience of the grey flannel suit was possible for most people who so vehemently criticized it.

However, the sheer idealism of all of these movements, on the arts elite side and the scientific side as well—suffered concessions to reality by the early 1980s. There is little dispute that the Cold War crested with the height of the Cuban Missile Crisis of October 1962. Increasingly throughout the Sixties, more notably following this event, the USA began to develop numerous social institutions that were not contingent on the Cold War and the vast ideological complex surrounding it. Meanwhile, the USA increasingly suffered from the decline of its international status. In the 1980s political-economic policies increasingly began to address national crises in a manner that altered both countries effectively. In addition, Reagan and Thatcher seem to have decided to almost singlehandedly win the Cold War without the USSR really having to do anything about it except give up. This is indeed what the USSR did, as we know and will discuss

in the next chapter. The USA did this in the way that the USA knows best to do: spending.

2. Economic Bottom Lines and the Reagan-Thatcher Transformation

The cultural story of the 1950s is flavored too much by the one-note monomania that also characterizes the 1940s and 1930s. Lighter and mundane historical narratives are weighted down with the ponderous themes of depression, renewal through war, and the cultural excesses of the Cold War. Yet following the Cuban Missile Crisis, the United States' cultural and economic story begins to seem far more secular, so to speak. The stories increasingly start having highly independent story lines, indigenous or separate from the Cold War.

Despite the staggering cost of the Cold War economy, the most general story for this time period includes vast upward mobility for huge numbers of Americans. This story of new houses, refrigerators and boring stable 9 to 5 jobs and college educations, continued apace despite the cultural upheavals of the cultural elite, throughout an economic plateau in the late 1960s⁴⁴.

But starting around 1970, increasing disruptions to the international economy acted as an exogenous shock to the relatively protected U.S. economy. This meant that the welfare state would have to change, and the social assumptions of the culture would themselves also adapt. In this case, the state changed drastically, forcefully and rapidly. Social norms, and social absorption of the slowly dawning bad news, caught up much more slowly.

⁴⁴ The economic history of the rise and fall of relative American economic egalitarianism is a fascinating topic. In 2013, it is hard for many to read without a great sour expression. See Susan Faludi: Stiffed! and Paul Krugman's The Great Compression.

The Ancien Regime of the Postwar Demographic Bulge

It's not surprising that the economy of the 1950s and 1960s appears highly attractive from the vantage point of the present. Of course, certainty evokes discontent, and the society was far from just in innumerable ways. Yet as we saw in the chapter on the boats lifted in the scientific boom of mid-century, in retrospect it was an enormously beneficent time.

" In the rethinking of democracy that took place during the Second World War, the political forms of liberal parliamentarianism were supplemented by a new commitment to social provision. The Golden Age that followed was less collectivist than most wartime thinkers had imagined, and owed much to something they had not expected- the flowering in the 1950s of conservative individualism and economic growth through regulated capitalism. The social contract that grew out of this dual reform of capitalism and democracy evolved over **?? years. It was influenced rather less by the Cold War ... It rested, above all, on the twin achievements of full employment and growth." [Mazower p327].

To make a long story short, the parameters of this world began to alter dramatically with the oil shocks of the early 1970s. Oil and gas prices rose and gave rise to inflation combined with job loss and the earliest inkling of the decline of the American motor industry. The USA initiated contact with the People's Republic of China in one of Richard Nixon's least-appreciated acts, the transformation of that country into the factory of the world was foreshadowed. By the late 1970s, the United States was beginning to sag economically, experiencing stagflation and the early premonitions of severe competition from the Japanese auto industry in the late 1970s. Its social norms continued to be vehemently anti-business. The British economy was worse, chronically anemic and lacking in vigor. As illustration: late in the 1970s,

high school students in England were taught how to apply for the dole as a matter of course.

Reagan and Thatcher

National irritation with the perceived passivity of the USA abroad helped lead to the election of parallel and legendary leaders in the USA in 1980. A closely parallel story took place in the U.K. Ronald Reagan and Margaret Thatcher undertook effective and relatively unopposed radical Rightist rethinking of their societies. By the time the Iron Lady and the Teflon President got through with the society, it was vastly changed in every respect, and not least in its forcing the Soviet Union to cease its effort to keep up militarily in an effort to run it to death.

The long upward slope from the end of the Thirties through the 1980s consisted of a duration of abundant but relatively poor-quality and perfunctory housing, food, consumer goods. But with Reaganism, this period was over. Material life in the Western democracies started looking much wealthier for the rich, no longer an aesthetic and visual embarrassment relative to a condescending Europe. The beginning of this new sort of economic resurgence in the Western democracies brought about the significant enrichment of the material culture in the United States, with improvement in food, housing, later on in norms for the quality and newness of clothing because of foreign imports.

The darker side of this was the erosion of the egalitarian nature of the lackluster quality of the goods of life. The longer-term nature of Thatcherism was that it did not decrease public expenditure as part of GDP. It did bring about mass unemployment, increased homelessness, increased university fees, combined with increasing distinction between the wealthy and those

who were not⁴⁵. Reagan's economic policies included lower marginal tax rates for the wealthy, cutbacks in educational grants for university enrollment, and the purportedly accidental dropping of millions of people from Social Security benefits. As Susan Faludi's Stiffed reported, income levels and other aspects of life for the American working class, especially male, began to decline during this interval.

The Rise of the Yuppies

"...Greed is right, greed works. Greed clarifies, cuts through, and captures the essence of the evolutionary spirit. Greed, in all of its forms; greed for life, for money, for love, knowledge has marked the upward surge of mankind..." Wall Street, Fall 1987.

Michael Douglas' moment of cinematic eternity, as he rode the zeitgeist playing the character of Gordon Gecko, embodies the period. Less dramatically and at least as commonly, a poster which proclaimed: "Poverty Sucks" was popular in college dorm rooms throughout the Eighties. Increasingly throughout the 1980s, Opportunities for making money, most notably in technology and finance, appeared and proliferated throughout the 1980s. Small-scale stock trading was only made legal, if not easy, during the mid-1970s. This, along with the appearance of high-risk and low-graded bond issues ("junk bonds"), allowed people previously not able to participate in financial and stock markets to become wealthy through sheer financial acumen despite lack of social status or connections.⁴⁶

⁴⁵ Mazower, p330-334.

⁴⁶ *Barbarians at the gates* and *A Piece of the Action: How the Middle Class joined the Money Class* discuss the widening of financial markets, and some of its more extreme effects.

Prior to the Eighties, considerable suspicion had been heaped on this cohort- it was only during this decade that the term "filthy rich" seems to have disappeared. This author had not heard this phrase in at least twenty years, and was surprised when it reappeared during the Occupy movement of 2010.

By the Late 1980s

" Compared with two decades earlier, however, people had come to accept high levels of poverty and inequality. Over 45 million people- some 14% of the population- were living in poverty in the European Union by the late 1980s, 17% by 1993- a figure comparable with the situation in the USA and a striking contrast with the egalitarian tiger economies of East Asia. (Mazower, p341).

By the late 1980s, society was immensely altered, and this was what everyone increasingly saw as the norm. At least as important as the fact of the statistics was the increasing perception of these as the normal status quo.

Meanwhile, at a right angle so to speak from the Western capitalist economies, were the so-called alternate path economies. Japan and the Asian Four Tigers; HK, Taiwan ROC, Korea and Singapore, belied the necessity of participating in the Cold War controversy at all. The Japanese economic miracle,⁴⁷ followed somewhat later by the latter four, sidestepped the ideological fervor and commitments of the U.S. and U.K. as well as any part of the extremes of Communism. Non-aligned nations had appeared as such as early as the Bandung conference of 1955. Together, the East Asian miracle and the appearance of non-alignment

⁴⁷ Chalmers Johnson *MITI and the Japanese Miracle*; 1984?.

helped make the debate seem increasingly like an historical footnote.

- unilateral decision for the USA society to move forward regardless;

3. The Nuclear Sword of Damocles

"...What rough beast, its hour come round at last, slouches toward Bethlehem to be born?"

In light of the gutting and renovation and retrofitting of the USA and Britain, the Cold War was beginning to seem absurd and outdated. No matter: existence matters more than justification: it was still there. Most notably, its weapons were still there. Even as the society was increasingly less interested, the Cold War was still actually going on.

As Nietzsche said, if you look too deeply into the abyss, it will look into you. Well, it did. Looking into the abyss was something that this whole cohort did repeatedly and relentlessly as if it was what they had to do to maintain their intellectual respectability. The nuclear sword of Damocles hung in the immediate vicinity, always present, useless to speak of constantly.

The Nuclear Winter

Meanwhile, the tiny cadre of actual nuclear strategists and those concerned with weapons continued in this business. The solipsism of this culture eroded during the 1980s in particular, as nuclear terror increasingly began to be seen as un-winnable. More precisely, scientists began to discern that a nuclear war would destroy the world. High-level discussions of the physics and environmental issues of the nuclear threat indicated astonishing and fairly evident dangers that had been completely ignored:

“ Immense resources have been devoted to the design of nuclear weapons, but relatively few to studies of the drastic impact on our environment of using these in war.

A very important contribution to these studies was commissioned by the editors of Ambio, the environmental journal of the Royal Swedish Academy of Sciences, and published in November 1982. It sparked off an ominous line of enquiry which showed that our whole environment is at risk.

The key new factor was discovered by accident. The Ambio editors asked Dutch scientist Paul Crutzen and his American colleague John Birks to investigate the effects of nuclear war on the atmosphere, thinking that they would concentrate, as many others had done on studying the increased amounts of danger ultraviolet radiation that would reach the Earth’s surface.

But it occurred to them that smoke from fires ignited by the heat of the nuclear fireballs could affect the issue, so they made some rough calculations, and, to their astonishment found that there could be enough smoke to blot out nearly all of the sunlight from half the Earth for weeks on end. The key factor that scientists had neglected for over thirty years was smoke.

There could be twilight at noon”... the extinction of the human race could not be ruled out.” ⁴⁸

Apparently, no one had thought out this issue very carefully. This is evident because even a non-scientist, approaching this matter slowly and carefully, might well have asked about smoke from the fires ignited by the fireballs. This can only mean that people had been so terribly frightened by it all that they had been incapable of thinking about it. Even as the possibility of nuclear war was a looming issue that dominated the childhoods of the baby boomers, we weren’t scared enough. The bomb shelters and drills involving hiding under school desks, which took place for at least a decade through the late 1950s through

⁴⁸ Green, Owen, Ian Percival and Irene Ridge. Nuclear Winter: The Evidence and the Risks. Cambridge, U.K.: Polity Press. 1985: p1-2.

the 1960s, may be seen to be palimpsests- specious, inadequate remedies. It is not clear how disingenuous they were.

5. Conclusion

Significant erosion in the stark juxtaposition of the literary elite and their atonal and uncomfortable culture, and the scientific elite and their impregnable status had not destroyed them. The material evidence of the society showed widely socioeconomically dispersed progress. In fact, the late 1960s was a golden age in terms of both the general literacy of the American population and the sheer size of the American middle class. But despite these facts, a society that increasingly seemed post-Cold War was not peaceable, still seeming to have a nagging voice in back of its head.

By the late 1980s this culture was in decline- in a big way. Yet it could not really let go entirely of those brought up with it. It was sort of similar to the phenomenon of a lapsed Catholic who still becomes nervous and discomfited when near a church. Such a person is entirely different from a true agnostic or person of separate faith who has no such deep reflexive reaction. Monomania is eventually, boring, and old Leftists became very irksome. As with most dysfunctional relationships, it no longer strengthened anyone, but it could not be let go anyway. But at the same time it did not change the fundamental vicissitudes of the closed worlds. This orientation could accept and account for an increasingly small portion of the world, but there was life in it yet and until it was entirely over, it continued to hold power.

The intensity of the closed worlds of both the New York intellectuals and the American techno-elite had been substantively weakened by the late 1980s. While

this cohort was increasingly marginalized, it still was quite prominent in university circles, in major cities. Moreover, it continued to exert a hold on a large cohort of highly educated liberal arts yuppies.

But like every overwrought, Byzantine event, it wasn't over until it was over. Likewise, the Cold War military apparatus continued to employ a large United States army; an enormous military contingent with military bases that would soon seem extraneous, and undue economic and political attention.

There was still a great deal of force to both of these elites: the power to end their own hold on society would not conclude until Communism ended and the Cold War with it. The Two Cultures problem would be breached only by two massive world-historical events, as we will see in the next chapter. These events were the collapse of the Soviet Union, brought about by the internal arteriosclerosis of the USSR, and the commercialization of the Internet, which event was clearly set in origin by the Second World War and Cold War, and brought to its conclusion by the end of the Cold War.

Chapter 7. The Two Miracles of 1989, and the Aftermath

As we saw at the end of Chapter Five, the vehemence and insularity of the closed worlds of both the New York intellectuals and the American techno-elite had substantially weakened by the late 1980s. Yet even at this late date, both elites still wielded a great deal of force. Their hold on the larger society would not conclude until Communism ended.

And Communism was of course, on the verge of ending. In a swift upheaval, the Cold War ceased, unilaterally with the demise of the Soviet empire. At almost exactly the same time, the Internet finally became sufficiently mature to become a commercial rather than a research concern. Like many things that happen extremely fast, these changes had been brewing for a very long time.

1. Introduction: The Stale Cold War and the Great Mistake that Began to End it

“...if you seek peace, if you seek prosperity for the Soviet Union and Eastern Europe, if you seek liberalization, come here to this gate, Mr. Gorbachev, open this gate. Mr. Gorbachev, Mr. Gorbachev, tear down this wall”. Ronald Reagan, June 12, 1987.⁴⁹

Speaking a few feet from West Berlin’s Brandenburg Gate in 1987, United States President Ronald Reagan implored Soviet leader Mikhail Gorbachev to tear down the Berlin Wall. Gorbachev actually initiated reforms, without going so far as to do what Reagan had urged. This was enough to start processes that could not be undone. Human initiative would have to take care of the

⁴⁹ Ronald Reagan quote, June 12, 1987.

rest. However, some mechanism had to be set in place that would disrupt this elaborately held-together Rube Goldberg design. It had to end, but how ? By what mechanism ? The Cold War was stale toast, but its apparatus was still in place, and enforced with a massive Soviet (and Second World) military presence, juxtaposed with a comparable American (and allied) military presence.

Likewise, the Internet was bursting through its own limitations, as more people found ways to use relatively clunky and slow email and research increasingly depended on file transfer and remote access. However, the way in which it would be far more widely used had still not been discovered. At the same time, computers were still relegated to offices, were difficult to use, etc., far from really ubiquitous.

Two events that originated in 1989, and took several years to work themselves out, took place. The first, the fall of the Berlin Wall and of the Soviet Union and its empire in short order. The second, the creation and hasty commercialization of the World Wide Web.

2. How the World Ended: the Cold War Concludes

" At the stroke of midnight on November 9, thousands who had gathered on both sides of the Wall let out a roar and started going through it, as well as up and over. West Berliners pulled East Berliners to the top of the barrier along which in years past many an East German had been shot while trying to escape."⁵⁰
Time Magazine, November 20 1989, p24.

It seemed impossible, but it took place. The night the Berlin Wall fell, and the subsequent events were like the unfolding of a bad dream that was real, a *Gotterdammerung* in reverse. The Berlin Wall fell,

⁵⁰ *Time Magazine*, November 20 1989, p24.

inadvertently, with the amateurish help of the purportedly competent East German dictatorship. The East German bureaucracy, which had the reputation of being competent in its obsessive spying and control over its tiny country, proved to be a fumbling mess.

At the very end of October, longtime East German party boss Erich Honecker was replaced by seasoned yes-man Egon Krenz.⁵¹ The discontent but historically prudent East German population responded with fury, immediately began holding massive anti-government demonstrations demanding increased freedoms.⁵² Their unusual actions were in a response to Hungary's unilateral acts several months earlier:

"The Hungarians... made their own distinctive contribution to the dissolution of Communist Europe only in August 1989, when Germans from the GDR were allowed to enter Hungary freely as tourists. This apparently modest administrative concession was of much more than merely economic significance. It indeed hardly mattered at all to Hungary herself, for her German visitors' known real purpose was to present themselves to the German Federal Republic's embassy and consulates in Hungary in order to seek asylum in the West. A complete opening of Hungary's frontiers came in September. Czech soon followed suit and the flow became a flood. In three days 12,000 East Germans crossed from these countries to the West... For the GDR... it was the beginning of the end."⁵³ Roberts 1999, p761.

Krenz and the Politburo decided to allow East Berliners to leave directly through crossings in East Germany proper, including in Berlin, starting on the

⁵¹ Newsweek October 30 1989, p52 53; Erich Honecker, ran the country 1971 through 1989.

⁵² Newsweek November 13 1989, p50-51, massive antigovernment demonstrations;

⁵³ Roberts 1999, p761.

morning of November 10. East German party boss Gunter Schabowski was informed of this decision, but accidentally construed it as intended to take effect on November 9. The overwhelmed border guards, given conflicting information, simply conceded to pressure from the gathering crowds of East Berliners. They finally began allowing the tens of thousands of people to go through without any identification. The East Berlin police were not known for laxity or mercy, and the spectre was thus doubly absurd.⁵⁴ It is surely one of history's greatest absurdities that the Berlin Wall was breached because of a mistake.

3. The Slow Collapse of the Soviet Universe

The political collapse of the Soviet 'Iron' Bloc, anticipated by both the CIA and the KGB,⁵⁵ had been brewing throughout the 1980s, based on causes both internal to the Soviet world and external to it. External causes are fairly well-known in the United States. Ronald Reagan was elected U.S. President in 1980 on a platform of revitalization. He did this but also engaged in detente with Mikhail Gorbachev, a pragmatic and reform-minded politician who had come up through the Soviet ranks. Reagan simultaneously drove on with even more extreme and expensive weapons systems, in this case with the Star Wars anti-missile defense system plan.⁵⁶ This plan, never realized, may or may not have bankrupted the Soviets but by no means helped.

⁵⁴ The movie *The Lives of Others*, offers an excellent dramatic illustration of the venality and cruelty of the East German system.

⁵⁵ Kotkin p2.

⁵⁶ E. Teller's biography.

As Stephen Kotkin explains in *Armageddon Averted*, the system was collapsing due to its own internal ills, both political and economic.⁵⁷ Most notable included the ongoing civil wars- in the long-angry provinces of the Caucasus, Ossetia, Abkhazia, Chechnya... and the pretzel-shaped newly carved-out state of Moldova.⁵⁸ The enormous centrally planned non-market economy could never run well. It began to run even more poorly by the 1970s, leading to declining agricultural production, further ecological decline, and even lower life expectancy.⁵⁹ The majority of the population- indeed, the proletariat- of such Soviet satellite states as Poland was impoverished, leading to the Gdansk shipyard uprising and nationalist and environmentalist movements in other Baltic states⁶⁰. By the late 1980s the Soviet empire was beginning to unilaterally lower its military forces, for instance cutting its Warsaw Pact ground

⁵⁷ Stephen Kotkin, *Armageddon Averted*.

⁵⁸ Kotkin p4.

⁵⁹ Kotkin p26. This decay had been enroute for a long time: ...by winning the Second World War and therefore having no necessity or feeling no desire to change fundamentally to compete in the transformed post-war international context, the Soviet Union in a way doomed itself... right in the midst of its great 1970s oil boom, the Socialist Revolution entered a decrepit old age.

Soviet economic growth slowed substantially, and because quality was notoriously poor, requiring high rates of replacement, a Soviet economy growing at 2% was tantamount to stagnation. Soon, outright recession-- by official statistics- set in. Decades of ecological degradation also reached the tipping point. key demographic trends were reversed: infant mortality began to rise, and life expectancy at birth began to decline." Kotkin p26

Moreover, Kotkin explains, the more basic international situation likewise overdetermined the USSR's demise: "competition with capitalism... was unwinnable", p26.

⁶⁰ Mazower p363, 380-381.

forces by one-half million (Gaddis, p236). The will to counter the increasing nationalist movements in the Soviet satellite nations- for instance, environmental protest movements in the Baltics in 1987 (Mazower p380), Estonia's 1988 declaration that it was now autonomous; (Mazower p380); and Poland's partly open Parliamentary elections in August 1989, at which enormous political inroads were made by the Solidarity movement (Mazower p381)- was simply increasingly absent.

A multiplicity of factors, thus, forced the Soviet system into collapse, in an overdetermined event that was nevertheless dramatic.

" During the summer of 1991 a cabal of the communist hardliners attempted a coup against Gorbachev. He was arrested while on vacation near the Black Sea, and the hardliners declared a state of emergency. But the effort was poorly organized, and it began to fall apart at once. Large crowds gathered in Moscow, where they confronted troops sent by the leaders of the anti-Gorbachev plot..."⁶¹ (E.M. Roberts 1999).

Popular politician Boris Yeltsin then climbed on one of the tanks, and the troops, clearly of a different mettle than those of decades earlier, would not shoot. By the end of 1991 the USSR dissolved.

Marxist-Leninism had to end, eventually. And the second that it ended, it became totally obsolete. By the time that Mikhail Gorbachev conceded power to Boris Yeltsin, Gorbachev himself was already an elder statesman who was too high-minded for the nation and the world he faced:

" And so on December 25 1991,... the last leader of the Soviet Union called the President of the United States called the President of the

⁶¹ E.M. Roberts 1999.

United States to wish him a Merry Christmas, transferred to Yeltsin the codes needed to launch a nuclear attack, and reach for the pen which which he would sign the degree that officially terminated the existence of the USSR...Determined despite all, to put the best possible face on what had happened, he then wearily announced in his farewell address, that:

‘An end has been put to the ‘Cold War’, the arms race, and the insane militarization of our country which crippled our economy, distorted our thinking and undermined our morals. The threat of a world war is no more’. ” ⁶²(Gaddis, p257).

It gave way to bored disinterest rather than ongoing fury, and to political regimes of incredible cynicism and materialism in the former USSR. The incredulity of the commencement of the Berlin Wall and the great thudding letdown of the USSR’s collapse holds an immense contrast. As President Emeritus George H.W. Bush and his former secretary of State Brent Scowcroft said in their memoir, *A World Transformed*;

“ It was over. An event I had never imagine I would live to see in my lifetime had actually taken place. It left me feeling numb, disbelieving.” ⁶³

The advent of the Internet Boom followed closely on its heels.

4. How the World Began: The Swords of the ArpaNet beaten into Plowshares

The second miracle of 1989, the creation and breakneck commercialization of the World Wide Web, was also ultimately, the product of the Cold War and of its tools. This connection was more indirect, but nevertheless was traceable and undeniable. How did the

⁶² Gaddis, p257.

⁶³ Bush and Scowcroft- *A World Transformed*;

Cold War tech environment, once it became a concrete reality, polarized the arts and sciences. If so, how could computers, one of its most arcane products, ultimately extricate American, and world, culture from the vertigo of the Closed world ? We shall have to backtrack slightly in order to answer this. As we saw in the last chapter, the technocratic world of computer and technologies derivative from the Cold War were nothing if not well-funded and productive.

Beginning in 1980, pop computing began to be accessible to a vastly larger number of people; The first new genre of users were hobbyists, professional or Sunday engineering amateurs who were willing to assemble their own computers from mail order kits. This was a natural technical possibility that had been made real by the Intel 7004 microprocessor earlier in the decade. This product permitted increasingly large volumes of data processing to take place on an increasingly small integrated circuit. (It was also a vindication of Moore's Law, which was actually an empirical observation indicating that the chip would become progressively smaller). The commercial possibility was made real by a half-dozen poor-quality personal computer efforts, and then by the inspired creation of Steve Jobs and Steve Wozniak.

The artifact of the personal computer was thus made available to millions of people rather than only hobbyists with tweezers, soldering irons, and time to burn. The companies that made the computers proliferated and grew from strip malls in Tucson (the original site of Bill Gates' commercial efforts at personal computing)⁶⁴ to multinational corporations. The ancillary applications could become well-known, and

⁶⁴ which one started this way ? altair ? the guy bill gates initially competed against.

their feedback effects enhanced. Economies of scale in the production of computers fed itself, and the demand for software and every form of hardware made clear that new innovations would pay off.

As we saw from the earlier chapter regarding parallel worlds in earlier decades, applications that would allow timesharing to be really effective had not yet been developed. As Internet historian Janet Abbate indicates:

" In the 1980s the Internet's infrastructure grew impressively, but network applications lagged behind: email and file transfer were still the most common activities and there were few user-friendly applications to attract novices." (Abbate 2000 p212).

Commercial services such as CompuServe, America Online, and Prodigy provided email service with some imagery and clunky user interfaces, but these were obviously unsophisticated early efforts (Abbate 2000, p213). While email was an established, if rudimentary technology, there was not yet any systematic means by which to traverse cyberspace. In the very early 1990s the 'gopher' software for file and text search was developed, as was WAIS- wide area information system- by Thinking Machines Corporation. These two tools made it easier to search for data files by text and word, but did not represent the necessary significant step forward. As is well-known at this point, Tim Berners-Lee wanted scientists to share multimedia data, and developed HTTP, HTML and URLs at CERN in 1989 and 1990 (*Weaving the Web*). Researchers at CERN started using this as early as this point. But search itself needed to be made easy, rather than the ponderous process that it still consisted of:

" All these issues [impossible to search] were addressed by a new internet application that became known as the WWW. The Web would

fundamentally change the internet ... by attracting] millions of new users and allowed the internet to be new roles as 'entertainment medium, shop window and vehicle for presenting one's persona to the world". (Abbate 2000 p214).

In 1993 an NCSA team led by Andreessen began developing an improved web browser called Mosaic, in which color images and text words could be used as links (Abbate 2000, p215). The demand for internet services was only redoubled:

" When the NCSA officially released Mosaic to the public in November 1993 more than 40,000 copies were downloaded in the first month. By the spring of 1994 a million or more copies were estimated to be in use. In 1994 Andreessen left NCSA, went to Netscape..." (Abbate 2000, p217).

The Mosaic browser was followed with more sophisticated search engines. Meanwhile, the networking computing establishment was not, by a long shot, cognizant of commercial net possibilities. It appears that no one had anticipated any of this:

" In the early 1980s the focus of networking shifted from ARPA to the National Science Foundation, which managed a network called NSFnet from 1988 through 1995. The NSF assumed responsibility for the Internet in 1990. The original Arpanet was decommissioned..."

The NSF was nothing if not high-minded. As historian Paul Ceruzzi explains, "The NSF's 'Acceptable Use Policy' read in part: 'NSF Backbone services are provided to support open research and education in and among U.S. research and instructional institutions, plus research arms of for-profit firms when engaged in open scholarly communication and research. Use for other purposes is not acceptable'." (Ceruzzi, p320-321).

Thus the "acceptable use policy" did not even fathom the possibility of the Internet becoming the medium of pornography, gossip, online dating, videos of cute cuddly kittens, movies on demand, college students writing papers from reading reviews on Amazon rather than reading the book, or worse, buying the paper, catalog purchases through electronic media rather than paper- and the list goes on.

The sincerity and dedication to public service and science borders on the pious, similar to the belief that the printing press was believed to be solely suited for the mass distribution of the Bible. Even as the NSF was expressing its mirthless piety, the www was being invented, in a likewise sincere spirit. In light of the increasing ability to combine text, graphics, email type communication, the scientific spirit was going to be run over like Wylie Coyote in the Roadrunner cartoons. Such naivete did not last long, not when there was so much money to be made:

" By 1992 the restrictions were lifted. Traffic on the Internet, already growing rapidly, grew even faster- from one trillion bytes [sic] a month in January 1992 to ten trillion a month in 1994... In 1995 the NSFnet was dissolved, and the NSF got out of the business of running a network and back to funding research. The Internet was privatized." (Ceruzzi, p321).

Meanwhile, the Internet's first massive businesses, among them eBay, Amazon, and AOL, enjoyed dramatic growth despite frequent crashes and poor-quality graphics and screen resolution (Ceruzzi p326).

As early as 1993, Newsweek magazine reported:

" More than 20 million people around the world are living 'online', crossing continents and cultures through computer networks. The data stream is awesome: scientific research, political debate, stock tips- and advice to the lovelorn." (September 6, 1993, p42) .

5. Conclusion

Was 1989 marked by an eerie feeling that everything is about to change ? Or was it more like a car accident that happens before one's eyes without any apparent warning, and thus does not even seem real. In at least two distinct ways, the timing of the major events of 1989 was not coincidental. This is the case even though the Internet boom and the fragmentation of the Soviet empire were not immediately related. As the Soviet bloc collapsed, it crushed the final ambiguous squishiness that the American New Left and the postwar intellectuals had felt toward capitalism, because it made clear that they had better accept the capitalist system or at least work to improve it, since there was nothing else available. At the same time, the relative allure of politics driven by ideology dropped terribly. The accruing appeal of the technological world, driven by commercial computing, enhanced the appeal of the western world from the vantage point of the culturally stale Soviet bloc, as well as giving fewer excuses to western liberals to eschew involvement in commerce.

It was the end of history- or at least a certain rendition of it, as Professor Fukuyama told us. But the world begins after the world ends. As we will see in the next chapter, the consequences of these two things happening within a very few years of each other were staggering. Basically, the sheer dramatic bluntness of the events caused a great mass migration of intelligent, and often previously effete, intellectuals into computing and commercial concerns. Previously, it had seemed that these two things were not going to change, because the tech people were perfectly content, and the arts people could not contemplate just how wrong they had been.

As we have seen throughout these chapters, the two cultures could not have been further apart in apparent attitudes about the world. Now things had happened that totally altered that world, and in the process the edifice of the artistic elite itself transformed.

Chapter 8. The Schism Resolved

1. Introduction

"One can't believe impossible things." Lewis Carroll.

Now that the Impossible had taken place, what would happen ? Without History in a Hegelian or other grand sense every actually occurring, history with a small 'h' did happen. As we saw in the last chapter, an impossible event that actually took place was succeeded by a miraculous one. The Internet, although it came along more slowly, was also miraculous. But it did indeed take place. The night the Berlin Wall fell, and the subsequent events in quick succession, were like the reversal of a bad dream that was real, a *Gotterdammerung* in reverse.

The best way to unravel a Gordian Knot is to cut it abruptly, and that is what took place here. The dazed feeling at the end of this was similar to the end of a too-long bad dream when one has overslept. An examination of the respective elite arts and technological communities shows that they snapped back into life extraordinarily rapidly. Like the far more venial and mercenary society of the post-Soviet Russian world, post-Cold War America has found idealism and ideology to be anathema. When nothing else seems to motivate, cash is accepted everywhere: extraordinary growth in personal and social wealth took place.

Economically if not politically, the late 1980s seems to have been the end of the *longue duree* of 1929 through the beginning of economic resurgence in the Western democracies. By 1995 or so the old world was

over and a real change apparent. While yuppies and their business orientation, general lack of interest in ideology, and relentless fascination with home decoration and private schools had appeared on the scene, in the mid 1990s they came into their full glory. Finally, the eradication of the conflict itself, with which every Western intellectual- practically every liberal arts college graduate in the world- had been imbued and immersed for decades.

2. The Unraveling of the Hegemonic World Order: The USSR

The intrinsic friction of the dissolution of the Soviet empire was lubricated by the universal solvent of money. Although it was perhaps miraculously without violence, it was still a sordid sight. Seventy-two years of Marxist-Leninism had exacerbated and solidified the deep cynicism developed in the five hundred and something years since the Mongol empires had been expelled from Russia. Rarely has a culture been so cynical, after so much repression, and therefore its dissolution was exceptionally grasping.

Elsewhere in the Soviet sphere, political boundaries were usurped and reallocated in swift order. Germany was formally reunified in October 1990, and the capital replaced in Berlin. Russian troops left Eastern Germany in 1994, after almost exactly fifty years of occupation⁶⁵. The stitched-together pastiche nation of Czechoslovakia fell apart peacefully, and was split into the respectively ethnically and culturally reasonable nations of the Czech Republic and Slovakia. The Czech republic in particular rapidly became a privatized economy. Yugoslavia collapsed into six national units, with several fighting various civil

⁶⁵ Mazower, p389.

wars and wars against each other for the rest of the 1990s. Albania struggled with its own intense poverty and began to turn around after a decade of preposterous farces in the worst traditions of capitalism. Other Eastern European borders did not move, but the nations began to be independent, finally.

The imagined event that had evoked the greatest fear, Armageddon itself, did not take place. Apparently, there was simply no more market for it. During the Cold War, the USSR had been referred to as the Second World. Now the title shifted to the emerging powerhouses that had held onto their cultural and economic autonomy as far as they could. They did so even as they had been forced to side, to some degree with the USSR or USA. This was an extraordinary boon to a number of countries- the previously backwater and ignored Second World resurgent. As scholar Parag Khanna writes in *The Second World*,

" It is plain to see that no one is actually in control. I do not believe that any one power ever will be again."⁶⁶

3. The Unraveling of the Hegemonic World Order: The USA

Is there something comical about the fact that the USSR simply opted out of a conflict it had been all-absorbed in for decades ? Perhaps, but too much pain was involved for humor. The Soviet Union just stopped caring- both as a government and as a society, about the larger ideology which had been dead for so long. Still, the conclusion of the Cold War needed both sides to disarm, and the USA participated as well. The USA, as a politically active society- even possibly, one suffering from hypothyroidism- cared a great deal. The Cold War apparatus was dismantled, amidst great news

⁶⁶ Khanna, 2008. ix.

coverage and the loss of millions of associated jobs, the closing of numerous military bases in the USA and abroad, and the decommissioning of military sites. Some of this had already taken place, for instance with the shutdown of almost three hundred Nike Missile sites surrounding urban areas around the United States during the late 1970s. The only place where the USA continues to maintain immense preparedness is in South Korea, where the United States maintains a watch against North Korea, the sole remaining antique freak show of a world Marxist-Leninism and a Cold War that is long over. However, apart from this, the process was intensified during the 1990s and early 2000s, leaving the country itself far less militarized even on a domestic basis.

Politics replaces Ideology

Even as politics was quickly being shown the back door, it was replaced by something that had seemed crass and besides the point to generations consumed with ideology. That is, it was supplanted by money. As Cold War historian Martin Walker explains, the historical sequence of end of the Cold War allowed the subsequent US president to be known as the harbinger of economic good times. Bill Clinton, notwithstanding his own spectacular abilities, was set for an impressive streak of achievement, as he pushed through the NAFTA agreement:

“ By 1995 the Cold War world of geopolitics and geostrategy had become a world of geo-finance and geo-economics in which the virility symbols of nation states were their export figures and their growth and inflation rates, rather the number of missiles and warheads they could brandish. This process owed much to the acceleration deliberately imparted by President Bill Clinton, who is likely to go down in history as the free trade president”⁶⁷.

⁶⁷ Walker, p348.

4. The Dotcom Boom and the Ineffable Coolness of Computers

“ In the second part of the 1990s, Silicon Valley had the same center of the universe feel to it as Wall Street had in the mid-1980s... it was the source of a great deal of change. Up until April 4 1994, Silicon Valley was known as the source of a few high-tech industries, and mainly the computer industry on April 4 1994, Netscape was incorporated. Suddenly- as fast as that- Silicon Valley was the source of changes taking place across the society. The Internet was a trojan horse in which technogeeks entered all sorts of markets previously inhospitable to technogeeks. ” pxi.⁶⁸

Nature abhors a vacuum, and indeed the juggernaut of the Internet's growth almost immediately began demanding an inordinate amount of the time and energy of millions- and giving back as good as it took. The computer did not get us into the Cold War mess, but helped to stabilize it. Moreover, it certainly now was helping to get us out of it, and lead the world in a different direction. Just as with the dissolution of the Soviet Union, the solvent was the prospect of a good deal of money.

We saw in the last chapter that a series of developments in networking took place that allowed email to become more commonplace; files to be exchanged and remote computers accessed more easily; and finally, commercial concerns to be initially undertaken through the net. In close proximity to the collapse of the Berlin Wall and Iron Curtain, the military and commercial usages of the Arpanet were decoupled. The Arpanet was decommissioned from the military- which in turn began to use more secure military computers for its communications- and the NSFnet itself was quickly supplanted by far broader Internet traffic. The Mosaic

⁶⁸ Lewis, Michael. *The New New Thing: A Silicon Valley Story*. New York: W.W. Norton & Co. 2000. p xi.

browser allowed navigation between sites using hypertext; the development of search engines allowed easy traversal between these sites. Once that had been accomplished- or even initiated by a number of search engine companies- a veritable flood of commercial concerns began to transform American and world society. The Dotcom boom had begun.

This culture has seen no dearth of coverage. The Dotcom people were indeed enthusiastic about computing's new uses, and very nearly as excited about writing about it in great detail. Clearly, the habit of talking about oneself, in informal language, including miscellaneous and needlessly personal details, was a generational point only made more emphatic by the invention of the Blog, twitter, instant messaging, Facebook, and myspace. Not surprisingly, fashion followed the money. Geeks became cool as they never had been previously, as computing devices became universal. This had been on the way since the beginning of the personal Computer Revolution. Of course it had been initiated by Steve Jobs, always squarely at the intersection of computers and style. But following the intro of the web, this was taken up much more persistently and with more conviction. He became as enduring a style icon as Mick Jagger, proof that the geek was becoming cool.

5. Unanticipated Solutions and the Fin de Millennium Culture

The Artistic Elite Unfreezes

With their existential stuffed animal finally taken away from them, many people who had been Sunday worshippers in the postwar intellectual (secular) religion were left without religion. But now, a good deal more offered to them, namely wealth and the prospect of success in business, something that had not

been anticipated earlier. Without ideology or at least with far less of it, money proved a comfort.

The civilian aspect of Cold War alumni technology was become far more germane to the larger world than it ever could have anticipated. Meanwhile, the American artistic elite realized, fairly abruptly, its own irrelevance. The end of the Cold War finally freed the American literary elite from its pursuit of a failed dream; the commencement of the Internet age offered them the chance to become part of a wealthy commercial elite. The isomorphism to the Soviet system's collapse is astonishing.

6. Conclusion: Now, What ?

" It's better to be looked over than overlooked." Oscar Wilde.

From the perspective of 2012, there are more than enough problems with which the world, and the heirs of the generations discussed in this book, will have to contend. The wistful adage of East Germans comes to mind: 'It used to be that nothing was permitted but everything mattered. Now, everything is permitted, but nothing matters'. We may alter aphorism slightly, for our times, by saying: much less used to be possible, and everything was exciting. Now everything is possible, but the nature of the excitement is itself highly different.

Chapter 9. Conclusion: If the Past is another Country, the Future is another world

1. Introduction: The Conundrum Solved

Once upon a time, the author remembers growing up in a very different setting, with many certainties despite its intense civil conflicts. The world was neatly split into several immense blocs. The Iron Curtain, dividing the developed world of Europe, the United States and Japan from the Soviet Bloc, could not be breached. The incomprehensibly vast interior of the Soviet Union and its satellite nations, both inexplicable and sinister, were obscured from view. To a child in the great hinterland of America, it was as far off as the Central Asian Kingdom of Prester John had been to a peasant in medieval Christendom. Growing up in Middle America, one never met anyone from this place, regardless.

Still other parts of the world- Red China, still controlled by Mao, Southeast Asia and its endless war, among others, were mysterious for less disturbing reasons. They were just blocked off because of the great impracticability of going there. The Third or underdeveloped world was lacking in First World advances such as private telephones, newspapers, paved roads, or relatively reliable police forces. Even in Western Europe, currencies and passport restrictions made movement across borders relatively problematic.

The might of the American armed forces was protective- from the perspective of an American- but was intensely powerful and fearsome at the same time. The army, like the Soviet or Chinese bloc, was barely visible to most Americans living stateside.

While the United States continued its slowly increasing upheaval during the 1960s and 1970s, it still persisted in very clear racial hierarchies, slightly more flexible gender hierarchies, and a gradually decaying hierarchy of proper etiquette and manners. Suits and dresses were required for the respective genders at most workplaces. Hippies did indeed exist, but their opposition to formal notions of respectability was also immensely clear. Said formal behavior and language were very well-defined; grammatical niceties, like proper handwriting, were universally understood and observed. Obscenities were not printed in newspapers or magazines, nor were they spoken by polite people in open conversation. From the status quo of 1960, these conventions took decades to erode.

Other priorities were quite severely at odds with those we pay attention to now. The nuclear threat, civil rights and social justice compelled our attention. Technology in the form of personal computers were not among these priorities. On the contrary, they were utterly unforeseen by all but a small handful. Computers were hardly used and were inexplicable and impossible to use. They were off to the side, an unusual interest that seemed obsessive to all but its proponents- like real estate or gourmet food. They were unheard of as really useful for regular people.

Almost every previous fact, as enumerated above, is now over. Once there was a way to get back home again, and there certainly is no more. Goodbye to all that, as the phrase goes.

Reprise

We have described the tying and subsequent tightening of one of the tightest and most intractable

knots in history: the mutually alienated estranged cultures of the arts and the sciences in the Twentieth century. *Out of the Closed World: how the Computer Revolution Solved the Two Cultures Conundrum* has studied the elite intellectual culture of the Twentieth century, the nature of its increasingly claustrophobic worldview; the rise of the technical-scientific culture of the Cold War; their estrangement and their parallel progress through several decades of the century; and the sudden events that cut the Gordian knot. The knot has been untied and dissolved.

Thus, the computers of the Cold War saved us from the closed intellectual world of mid-century. The closed world of the Cold War at first exacerbated, and then solved the schism between art and science. The end of the Cold War also resolved the dream of Western culture- the eternally doomed dream of Marxism, that is- it left far less of the existing dreams to rely on. However, new dreams were not far away- in fact they were provided by the computer itself.

2. Themes Revisited: the Closed World, the End of History, and the Biography of a Generation

The Closed World

The world of middle class America and the Western world was indeed closed in that these things were so sure and changing very slowly. Now all of these certainties are indeed gone. An enormous preponderance of the world is passable, if increasingly dangerous. Our world is open and its excitements are things that we did not imagine in the mid-1980s.

The danger is unspeakably ameliorated, but the sense of an ideological glory being at stake is gone as well. The intense utopian sense of the world's possibilities was as appealing as it was dangerous. It offered an

illusory and temporary satiation which was clearly parallel to addiction. In one's individual life as in historical developments, you know you are really over it when you start saying- 'what conundrum?', when it simply seems truly redundant; or really very much beside the point. That conflict is over, and those who held onto it too long were historical slow learners.

The End of History

" The end of history will be a very sad time. The struggle for recognition, the willingness to risk one's life for a purely abstract goal, the world-wide ideological struggle that called forth daring, courage, imagination and idealism, will be replaced by economic calculation, the endless solving of technical problems, environmental concerns and the satisfaction of sophisticated consumer demands. In the post historical period there will be neither art nor philosophy, just the perpetual caretaking of the museum of human history. (H.W. Brands, *American Dreams*, p278); CITE THE ACTUAL ARTICLE;

In his original 'End of History' article, Francis Fukuyama certainly did lay it on thick. Fukuyama himself indicated that his nomenclature misled numerous readers: he spoke about the end of history in a philosophical and Hegelian sense, referring to this particular form of historical ideals. He did not refer to the end of events; in other words, that he did not lack common sense. Subsequently Fukuyama himself has indicated that there are new historical dimensions- as Our Posthuman Future explains, the biological manipulation of humans and other organic beings ends the certainty that nature once held. No further information is necessary; we know for certain that Marxist-Leninism is utterly useless and bad as a way to run a society.

The Biography of a Generation

" Arrive at a place and know it for the first time."
T.S. Eliot.

The rational, calm statement of the feeling we once had can be restored, as if embalmed, but the feeling itself cannot be. The generation started out w the Cold War, and saw that utterly thrown away.

3. The Vertigo of the Open World

Let us recall the physical metaphor: how does one steady oneself when faced with vertigo ? First, one finds the ground where it is steady. Well, thus what are the facts of the world ? It is indeed hot dry and flat; it is digitally universally accessible- indeed it is hard to hide. With almost no exceptions (Iran, North Korea) it is easily traversed. If there is another Gordian Knot in formation, this author can't see it. This sort of cultural construction requires two mutually intelligible entities, with enormous associated populations, to reorient themselves toward each other, and this is not the case with the radical Islamic forces and the consumerist "McWorld" as sociologist Benjamin Barber has put it. Technology is invariably portrayed as the source of a Renaissance but definitely does not apply invariably considering the great distance between the intensity of radical Islam and the secular world that thrusts its technology on the Islamic world.

4. What Now ? New Paradigms

Not only was the world during the fifty years of the Cold War hegemonic politically, it was often monomaniacal in that its immense and overwhelming concern was politics. All of the truly great struggles appeared to devolve to this. From inside that *weltaunschaung*, it is hard to imagine how anyone could

have been obsessed with anything else. We know that there were numerous other causes at the time: the Cold War trumped all in the sheer power it monopolized.

The early decades of the 2100s are more intrinsically sophisticated in a sense: we have many more issues, and all of which make the grand claim that they are major ways in which to see and reinterpret history. Any of which can be seen as major divisive bases for an intellectual *weltaunschaung*. These are actually orthogonal from each other. As it often does, science fiction points the way. We will summarize these, briefly, as history from the Cyborg orientation; history from the environmental orientation; and a larger temporal history, written over thousands of years, involving the strife between civilizations.

1) Cyborg history

A new, relentlessly optimistic and utterly teleological historical genre is that which chronicles the ongoing improvement of human-machine interfaces. (for instance, Ford, Glymour and Hayes, eds. Android epistemology 1995). It is also referred to as android history, or in a vein epitomized most dramatically by the work of computer scientist and futurist Ray Kurzweil. The Singularity, the concept initially proffered by science fiction novelist Vernor Vinge and popularized most notably by computer scientist and futurist Ray Kurzweil, offers the notion that cognitive prosthetics are so advanced that they will utterly overtake human conceptual abilities by the second or third decade of the 21st century. This is an historical view that is actually implicit in the history of technology since computing got underway. It is also the historical narrative according to which many digerati or technorati think.

2) Environmental history- salvation thereof

The human impact on the environment has resulted in the extinction of innumerable species. Hopefully, this will not be repeated with humans. Studies of the human impact on the environment- and here impact is, unfortunately, a euphemism- have been a new and enormously popular theme. At present, the author best known to the educated non-academic reader is the articulate and prolific Jared Diamond. Alternatively, this historical strain actually originated decades ago, at least as early as *Ecological Imperialism: The Biological Expansion of Europe 900-1900* (1986) by Alfred Crosby and *The little ice age* by Brian Fagan (2001). Like the historical fears of the Cold War, the thread of environmental history often holds an apocalyptic tone, something shown in its very book titles: Global Catastrophic Risk, for instance.

3) The historiography of cultural and civilizational clash

Civilizational clash can be written in a crass or thoughtless manner- but other plausible ways of considering it are immensely learned and erudite. This is epitomized by professors Samuel Huntington and Anthony Pagden- writing separately along broadly similar themes- both of whom draw on their vast historical knowledge to cite the deepest possible historical roots in the schism [sic] between Western and Levantine Middle Eastern civilization. Taken incorrectly, it can be and has been interpreted as hostile to such non-Western societies rather than simply very clear as to their profound cultural distinctions. Has another Gordian Knot formed that needs to be untied- to simply cut ? The same cult morphology is not visible to this author. The Gordian knot we described was in the same country, same cohort

or close. The knot of radical Islam is not a conceptual problem that can be resolved through intellectual discourse.

5. Coda: Requiem for an Idea

Even given the recency of these events, the larger tone is still one of loss. The remote feeling- how could we have possibly cared about these things so very much?- is perhaps more disturbing and far-off when the events are quite recent and the topic turns itself from history to the fact of one's own life. As often happens, Marcel Proust says it better than anyone. At the very end of Time Recaptured, his monumental *bildungsroman*, he looks at virtual ghosts in the person of his friends and acquaintances and tells us that not only society's sense of the world, but his personal sense, has been lost. At a large gathering of his social circle, the narrator realizes that they have all aged:

“ And it hurt me to think that I was obliged to look for them [for his old friends and lovers] within myself, since Time which changes human beings does not alter the image which we have preserved of them. Indeed nothing is more painful than this contrast between the mutability of people and the fixity of memory, when it is borne in upon us that what has preserved so much freshness in our memory can no longer possess any trace of that quality in life, that we cannot now, outside ourselves, approach and behold again what inside our mind seems so beautiful, what excites in us a desire (a desire apparently so individual) to see it again, except by seeking it in a person of the same age, by seeking it, that is to say, in a different person.”

Time regained, v vi of In Search of Lost Time, trans. Andreas Mayor and Terence Kilmartin. 2003 Modern Library, p438.

The demise of the entire complex of ideas and events surrounding the Cold War is like a burial that has

taken place so fast that it was almost like an unclaimed body being interred at Potter's Field. The fact that whenever really expressed, Western Communism has been the wrong idea and has led to immense suffering, does not mean that its demise was not painful, and that a wake is not required. Like the end of the theological cosmology of Christendom and the beginning of a scientific and indeed mechanistic world which Koyre spoke of, the larger scope of the world felt more alien if more coherent. The Closed World was an easily understood structure- this helps to explain why it lingered so long. Further we cannot linger: the present, and its harrying concerns, sweeps away even nostalgia for the past.

One of the senses that appears when looking at the conclusion of the "closed worlds" of the Twentieth century is the chill of the realization that the gut psychological sense of the world before 1989 cannot be regained. This is the case, much as the sense of the world before 1939 cannot be regained either. To the jaded intellectual palate of 2013, there may be sheer emotional lack of empathy with these sentiments. While we grasp to retain it like a dream that slips away when we wake up, we can't understand these emotions, any more than anyone now can really understand the intra-Christian religious wars that totally sundered Europe (and the American colonies) in the Seventeenth century. Memory is preserved, but it is desiccated- or petrified, as we saw when we commenced our study.

The ghosts of the past being exorcised, we need to turn to the immediate and exigent claims of the present. As Voltaire told us, we must tend our gardens.

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