THE ENIGMA OF NIKOLA TESLA:

A CULTURAL STUDIES ANALYSIS OF HIS LEGACY

by

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ABSTRACT

As Western Civilization has progressed from the Greeks, satisfaction of man's spiritual needs with his physical needs has varied across the millenia. Recognizing this, both James Dale Davidson and Lord William Rees-Mogg demonstrate a cycle of centuries where sweeping economic and technological change occur as a phenomenon biased by a hidden order. This five-hundred year cycle is exhibited in their theory of "megapolitics."

Additionally, many others, such as Neil Postman, Alvin Toffler, and Jacques Vallee, have described socioeconomic cycles within the twentieth century that are yielding societal shifts in material, ethical, and transcendant satisfactions. If they are correct, recent growth in information and media technology have possibly accelerated the shifts during the latter twentieth century.

In this analysis, recent cultural studies theories by John Fiske, Douglas Kellner, and Raphael Sassower, are used to examine the career, and legacy of the American inventor and philosopher, Nikola Tesla. Features are revealed that tend to substantiate the conclusions of Davidson, Vallee, Toffler, and others.

One principal feature of Tesla's legacy pivots on the assertion that an inventor's world view is expressed in the innovations that he or she creates, and the resulting technology changes society. Another is that communications technologies, as foreseen by Tesla and others, have energized

marginalized discourses that have considerable potency in changing the course of Western Civilization.

This researcher characterizes those alternative discourses where Nikola Tesla found a chorus. It is a case that corroborates the societal drift away from rationalism during this century, toward what Davidson calls, "delusional politics." Explicating four major examples, Tesla's effect on these modern marginalized discourses is revealed. These discourses are the Eastern religious, pseudo-sciences, UFO phenomenon, and the so-called New Age occultist. Tesla's influences are formally treated as sociological concerns of Vallee, Postman, and Davidson.

DEDICATION

To Dr. Robert Calmes, who steered my life's course into researching Tesla; Robert showed me that I really do prefer people over things.

To my late mother, Patricia, who patiently waited for me to figure out just what I wanted to do with my on again, off again, interests in Tesla. I finally know.

To my brother, Brooks, who apprehends the larger picture of my life's goals.

To my kids, may I be part of improving their world in a significant way.

To Patrick Reany, who introduced me to the Metaphysics of Quality.

And to Charla, who will share this new adventure with me.

Finally, to Prof. Aaron Baker, who pointed me in the direction of Sassower and Kellner.

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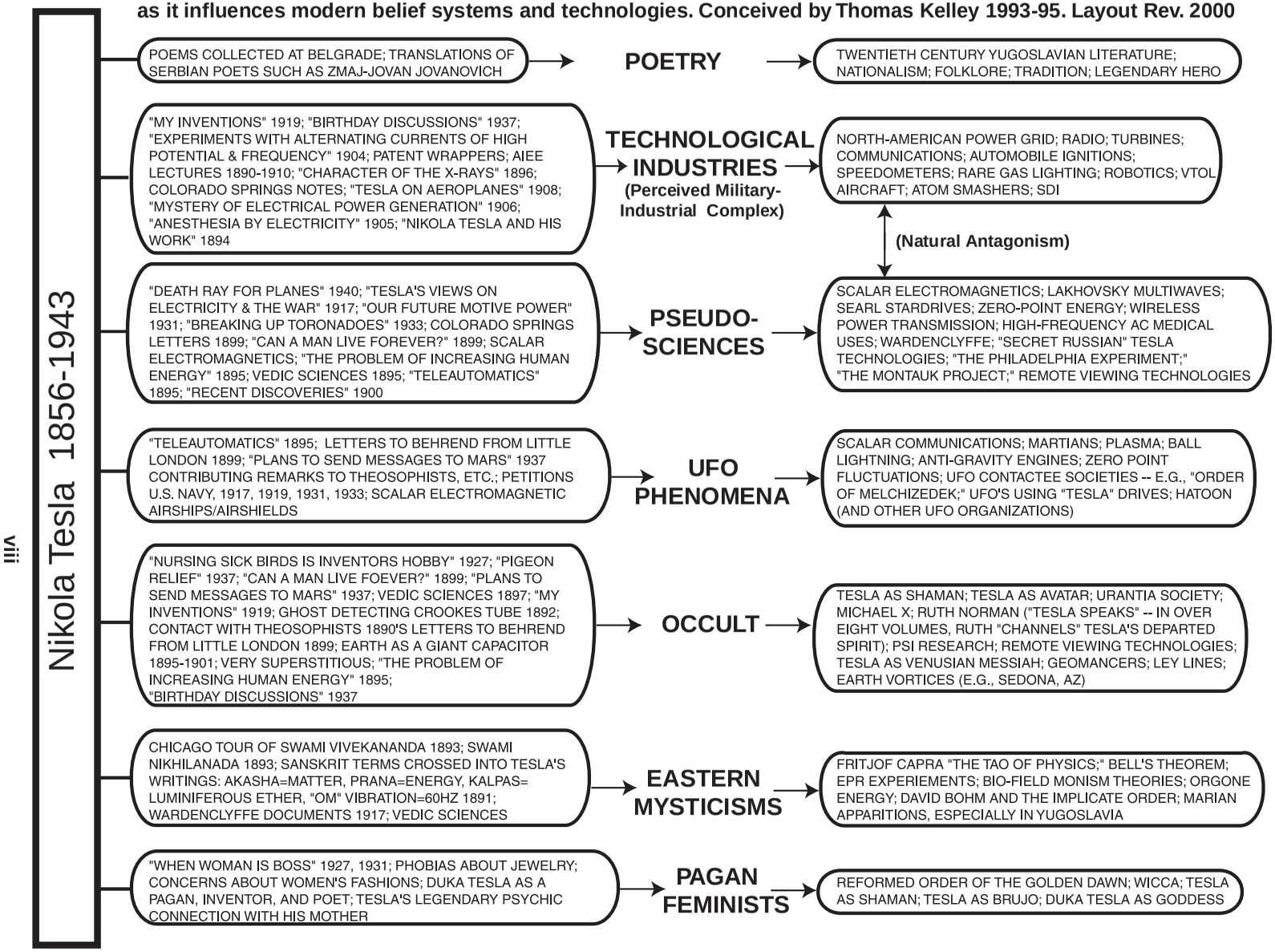
FIGURE 1. THE SEVERAL TRAJECTORIES OF TESLA'S LEGACY. Chart shows the extensions of Tesla's Legacy as it influences modern belief systems and technologies. Conceived by Thomas Kelley 1993-95. Layout Rev. 2000



FOREWORD

Sahuaro High School, Tucson, Arizona. April, 1974:

Inside the auditorium, there are nearly 200 science students seated in attendance, while a crew of five assistants help me to present a series of technical demonstrations of a 5KW class Tesla Coil system. At this point in the presentation, the students are murmuring to each other, talking, socializing, glad to have a break from the regular class monotony. While explaining the power that will be circulating in the helix, my assistants have wired the energy storage bank to the primaries, while I prepare to open the rotary gap. After placing the microphone down, I step onto the insulated platform, and take my position at the static gap. The teenagers in the audience are only marginally paying attention. I point to an assistant off stage, who throws the primary power switches closed. Some 40 amperes of 60HZ line current surge into the high-voltage 18KVA transformer and then into the energy storage bank. Everyone in the auditorium can suddenly feel an incredible hum. The platform that I stand on vibrates. With calculated sensitivity, I proceed to open the static gap. As the gap opens, a loud sparking noise and display of ultraviolet (flashes akin to that of an arc welder's tool) blazes forth.

At a certain point, as I turn the static gap open, the power breaks and transfers to the rotary gap. A deafening ear-splitting roar erupts, and a brilliant cascade of light harshly illuminates the stage, even casting strong shadows with people standing across the auditorium hall. The loudness of the roar has been described as the sound of a gun being fired each time a pair of rotary points break—which happens some 28,800 times per minute. The intense dynamic of light playing at the rotary gaps is too painful to look at directly. I let it run for about 30 seconds, then close the static gap. My assistant pulls the primary power switches. Despite the ringing in my ears, I can hear total silence in the auditorium as the echo dies away. For remainder of the lecture, I am going to have the audience's undivided attention . . . .

INTRODUCTION

Truth must wear its proper clothing, or it will not be recognized.
—Neil Postman, *Technopoly*

Sociological and Historical Issues

I assert that an indispensable issue in any quality analysis of sociological concern is an understanding of the role technology plays in the historical dynamics of society. Neil Postman writes, "the history of technology, which is as much as science and art provides part of the story of humanity's confrontation with nature and indeed with our own limitations." It seems that much sociological, historical, and religious study tends to overlook the usually subtle effects that technology plays in shaping the events and philosophical discourses under scrutiny by the researcher. After years of study, I perceive that technology interacts with culture in an often tightly coupled relationship. Postman continues, "we need students who will understand the relationships between our technics and our social and psychic worlds, so that they may begin informed conversations about where technology is taking us and how"(*Technopoly* 197-198).

Toward a realization of the principle above, I now qualify the term "marginalized discourse," as it will be used in the context of this analysis. It is a cluster of media texts representing the belief systems of one or more subcultural groups that are, for the most part, decoupled from the perceived dominant Western culture (in terms of what will be defined from Kellner's notion of mass-media culture, at least.)

Jacques Vallee, in assessing one of the significant marginalized discourses to be described in the following analysis, wonders in *Dimensions,* "Are we slipping, as Aime Michel has warned, toward a new age of the irrational?"(24). Many socioeconomics historians have recognized such a trend. James Dale Davidson writes, "As the year 2000 approaches, you should be alert to the strange fact that the end of each century divisible by five has witnessed a major transition in Western civilization." Relating this cycle to technological innovation as its cause, Davidson continues:

> Precisely five centuries ago, in this decade at the end of the fifteenth century, the Gunpowder Revolution exploded in Europe and Columbus sailed for America. . . . Five centuries earlier, at the turn of the tenth century, the Middle Ages began, as the European economy recovered from the long coma known as the Dark Ages.
>
> . . . Nonetheless, there is a reason to suspect that the patterns of history are more complex and bizarre than educated opinion has commonly thought. Growing evidence suggests that many phenomena that appear random are actually biased by some hidden order" (*Great Reckoning* 29).

Developing a belief system entirely compatible with the earlier beliefs of the subject of this analysis, Nikola Tesla, Davidson finds a correlation between society, technology, and man's need for spiritual fulfillment in a significant way. Paul Tillich has also addressed this issue of society and spiritual fulfillment evolving through Western Civilization. For example, Davidson and Rees-Mogg further sets up the modern situation, (in which Tillich finds a definable tension.) Davidson says:

> In Western democracies, social change is in most respects channeled through the political process. It has become second nature to assume that elections and debates are what matter most in the everyday ordering of life. They are not. Behind politics, as important as it is, are the megapolitical factors that ultimately determine how societies function (*Great Reckoning* 33).

Davidson writes in his followup work, *The Sovereign Individual*:

> The concept of megapolitics is a powerful one. It helps illuminate some of the major mysteries of history: how governments rise and fall and what types of institutions they become; the timing and outcome of wars; patterns of economic prosperity and decline. By raising or lowering the costs and rewards of projecting power, megapolitics governs the ability of people to impose their will on others. This has been true from the earliest human societies onward. It still is. . . . The key to unlocking the implications of megapolitical change is understanding the factors that precipitate revolutions in the the use of violence. These variables can be somewhat arbitrarily grouped into four categories: topography, climate, microbes, and technology. . . . (52)

Davidson pivots his thesis on the nature of technology as a principle factor of culture. He continues, "Technology has played by far the largest role in determining the costs and rewards of projecting power during the modern centuries. The argument of this book presumes it will continue to do so. Technology has several crucial dimensions." (*Sovereign* 56)

It is most striking that Davidson constructs a theory that not only is compatible with Tesla's beliefs in the natural destiny of humanity with respect to technology, but a careful reading of Tesla reveals features that are best understood from knowing Davidson's theory. For example, considering what Davidson describes as a cyclical characterization of Western history, an understanding Tesla's culture-bearing hypothesis asserted in his 1919 work, "The Problem of Increasing Human Energy," becomes trivial. Davidson writes:

> Understanding the way the world works means developing a realistic intuition of the way that human society obeys the mathematics of natural processes. Reality is nonlinear. But most people's expectations are not. To understand the dynamics of change, you have to recognize that human society, like other complex systems in nature, is characterized by cycles and discontinuities. That means certain features of history have a tendency to repeat themselves, and the most important changes, when they occur, may be abrupt rather than gradual.
>
> Among the cycles that permeate human life, a mysterious five-hundred year cycle appears to mark major turning points in the history of Western civilization. As the year 2000 approaches, we are haunted by the strange fact that the final decade in each century divisible by five has marked a profound transition in Western civilization, a pattern of death and rebirth that marks new phases in social organization in much the way that death and birth delineate the cycle of human generations. (*Sovereign* 36-37)

Perceiving that man needs a spiritual fulfillment within the context of his society, Tillich speaks of "estrangement" in the Hegelian sense, where the "absolute Spirit goes into nature, becoming estranged from itself." Tillich reflects that Karl Marx spoke of "alienation" of the society. Tillich states that Marx concerned himself with the *"dehumanization of man becoming a commodity, devoid of spiritual value, as a natural result of industrial technology."* By estrangement, Tillich says "the essential character of man is lost" (Tillich and Braaten 184-185) This is not only axiomatic to the technologies and speculations that Tesla developed throughout his career, it greatly enriched his legacy.

Davidson characterizes the rationalism of the Enlightenment, coursing through the Industrial Revolution, into the Information Age, as also containing a spiritual fulfillment. Yet, the technological innovations of the most recent times also suggest something of a societal shift in spiritual fulfillment. "[T]he microchip devolves societal institutions," writes Davidson. Will the resulting society be largely redefined, in what Davidson terms "delusional politics?" Davidson writes, "The noisiest opponents of Western culture are not content just to attack American institutions, they also attack the sciences, intellectual rigor, and logic itself as tools of oppression"(*Great Reckoning* 111).

Davidson has theorized a socioeconomic swing in history that cycles between the opposite extremes of humanistic ethics and materialist ethics. Postman, Vallee, Naisbitt,

Toffler,[1] among others, find similar cyclical socioeconomic dynamics located within the twentieth century. Based on their researches, the 1990s represent the transition toward a strong materialist ethics based upon both information technology and on moral changes in society. If that is so, then there should be localized evidence to suggest that Davidson, and his colleagues, are correct in their assertions. It is hypothesized that the following examination provides evidence toward a satisfactory demonstration of this sociological cycle.

It is the objective of this treatise, therefore, to characterize an emerging scientific paradigm of the sociological structure of present-day Western culture, one that requires an interdisciplinary approach to the history of technology. It is an analysis of heretofore marginalized discourses simmering throughout the twentieth century. In addressing the necessity to recover these discourses, Thomas Kuhn writes the mission statement of the historian of technology: "he must describe and explain the congeries of error, myth, and superstition that have inhibited the more rapid accumulation of the constituents of the modern science text"(2). And as it will be shown, these marginalized discourses are perceived by the dominant scientific community to be greatly flawed.

The origins of these marginalized discourses are at first seemingly inconsequential to their current state of evolution. However, it is a traceable and definable historical problem. Additionally, the need to examine these discourses sociologically is well stated by Jacques Vallee in *Dimensions:*

> This coincidence between scientific arrogance and a new social trend illustrates an important fact in our society: while science consistently refuses to consider phenomena that lie outside the safe regions of its current understanding, the public is eagerly reaching for explanations that fit its experience. While our scientists remain unaware of important data that could stimulate new theories of the universe, the rest of us miss an opportunity to make serious progress in what should be an important spiritual quest"(xiv).

How these discourses relate both to the long-term cyclical model by Davidson and to the spiritual estrangement described by Tillich may be answered by studying the nature of technical innovation as influenced by the worldviews of inventors. A variety of innovators working in America during the latter part of the nineteenth and early twentieth centuries have been shown to be seriously influenced by beliefs in spiritism, theosophy, and superstition.

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[1] John Naisbitt is author of the pop-culture work *Megatrends* and Alvin Toffler is author of *Future Shock,* and *The Third Wave.*

For example, Henry Ford dabbled in spiritism and practiced séances. Thomas Alva Edison believed in spiritism, in concert with Ford. Lord Kelvin was similarly influenced by the relative popularity of spiritistic beliefs. Other notables include the author Sir Arthur Conan Doyle.

Historically, of course, one can show that many innovators, inventors, early physicists, and the like were often governed in their theoretical constructions by otherwise religious or even superstitious beliefs. A most notorious historical case is that of Isaac Newton. While presenting a public face of no-nonsense and matter-of-fact reality, in private, says Jacob Bronowski, "He practiced alchemy. He wrote immense tomes about the Book of Revelation"(234). One finds Newton's spiritualistic beliefs intimately part of his theories of gravity and also of light.

In a practical sense, it usually appears that however an inventor came to realize his innovation, the resulting application of the idea, device, or technique is wholly decoupled from the creative process that developed it. Yet, it can be shown that an inventor's worldview does indeed set constraints that shape the results of his endeavors. More subtlety, sociohistorical and economic issues are raised from the interaction of technology with society. James Burke writes, "Each [technological] change brings with it new attitudes and institutions created by new knowledge. These novel systems then either oust or coexist with the structures and attitudes held prior to that change"(11). For purposes of an examination of these perspectives, an obvious sociotechnical case is revealed here in the life of the enigmatic American inventor, Nikola Tesla.

Jeff Johnson assesses this inventor: "In the past decade or so, Nikola Tesla (1856-1943) has become a name to conjure with—at least within the subculture of that American phenomenon: the Inventor. Few people recognize his name, although in the history of electrical technology it is as important as Thomas Edison's. Even Tesla's admirers don't seem to to know exactly what to make of him"(368).[2]

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[2] NOTE: One major problem should be addressed here, concerning the texts used to describe the controversy over Tesla. Most such texts in this analysis are, especially where examples are suitably produced by academic or professional authors, more often found in the popular literature that I survey. For their merit in this cultural studies project, these references should easily stand up to academic rigor, albeit not typically produced for the context of peer-reviewed criticism. For example, Jeff Johnson, while he may have superior credentials himself, submitted his opinions on this cultural production concerning Tesla only to a semiscientific journal. Despite this limitation, this cultural studies analysis still brings Tesla into the academic realm, both to complement current cultural studies theories and to offer new perspectives on Tesla's legacy.

The example of the life, career, and legacy of Nikola Tesla not only consolidates these sociohistorical interests in the one man, but it goes further to show how Tesla himself intensified the actualization of his worldview within his technical innovations. Because Tesla orchestrated his worldview into his technological accomplishments and writings, we have a historical situation where it is easy to directly chart the effect of his work. We can, through the career and legacy of Tesla, examine how technology incorporates a worldview, and then extends it into a societal structure.

A classification scheme realized by this researcher will serve to delineate the effects of Tesla's old-world, religious, and superstitious beliefs[3] along several sociotechnical trajectories of his legacy. Using Tesla's case as a framework, other inventor's worldviews can be examined against their own legacies, further clarifying their own sociohistorical effects. Additionally, the classification scheme that I set forth is intended to assist the sociologist and the historian of technology of the latter twentieth century to establish a basis of the operative belief systems crisscrossing several marginalized discourses.

Therefore, this analysis is a merging of recent cultural studies theories and an application of the history of ideas toward an efficient presentation of a heretofore academically unnoticed yet significant marginalized culture.

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[3] Tesla's personal superstitious habits are legendary. Descriptions of his superstitious behaviors are given prominence by every one of his biographers. See, for example, Cheney.

THE MARGINALIZED DISCOURSES

Nihil In Sacculo Quod Non Fuerite in Capite
[There is nothing in the pocket that is not first in the head]
—Nikola Tesla's favorite proverb

The Seven Major Trajectories of an Unsettled Legacy

Tesla created a base of technological endeavor that intimately reflected his worldview. It will be shown that this affected his choices of technology, and that naturally projected several powerful elements into his resulting legacy. It is sufficient to introduce the seven major trajectories of Tesla's legacy here, with four of these projections to be more fully developed later in this paper. As shown more fully in Figure 1, these aspects of Tesla's legacy are, by my own definitions

Poetry:	As an aspect of post-WWI Yugoslavian nationalism.
Technological Industries:	All of the practical inventions developed by Tesla.
Pseudo-Sciences:	Both alternative and speculative engineering beliefs and pursuits (e.g., "free energy" systems).
UFO Phenomena:	Both Tesla-derived propulsion and extraterrestrial (scalar) communications.
Occult:	Tesla as "secular shaman" and "Venusian Messiah"
Eastern Mysticisms:	Inclusion of aspects of Eastern and ancient mysticisms in science theory.
Pagan Feminists:	Duka Tesla as goddess (Nikola Tesla's mother).

Confluence of Eastern Mystical Discourses

> Scientific knowledge, like language, is intrinsically the common property of a group or else nothing at all. To understand it we shall need to know the special characteristics of the groups that create and use it.
> — Thomas Kuhn, *Structure of Scientific Revolutions*

Another major feature of this analysis will reveal Nikola Tesla to be seminal in the modern confluence of technology and physics theories with Eastern religious discourses. This will be explained in the first of the four extended examples. I will characterize the essential

chronological phases of his life and develop a schema that establishes detailed examples in four of what I assert to be the five principle lines of his legacy. These are Pseudo-Science, UFO, Occult, and Eastern Mysticism. Pagan Feminism is the fifth principle discourse, but it will not be examined in this treatise—(the bibliographic references about Pagan Feminism in the selected bibliography should suggest a definitive research project on this one topic). The remaining two trajectories of his legacy are much less dynamic at the close of this century (despite the recent fragmentation of Yugoslavia,) and an examination of these other aspects is not necessary for this analysis.

I will show that a number of several modern thinkers have relied heavily upon Tesla's synthesis of religion and technology. Tesla resolved to his own satisfaction, the spiritual estrangement of man in technological society. Many others have found Tesla's synthesis as a source authority for their own works.

An analysis of the literature relating to Tesla reveals a large body of what I term technocultural writing. This is marginalized technical literature that a significant percentage of which appeals to three subcultural groups that fall under various labels. The first subcultural group is defined as the New Age and/or Pagan. The second subcultural group is the Alternative, Extraordinary, or Speculative Sciences. The third groups definition contains the Futurist, Patriot, and UFO. However one defines these subcultures, Tesla's writings and utterances are given a preeminent place, usually offering authoritative justification for an author's agenda. Again, Figure 1 provides a survey of the seven major vectors of Tesla's legacy. I will examine Tesla's life and legacy within the context of his powerful effect on these subcultures. Structured as a historical analysis, this study is helped by recent cultural studies works of John Fiske, Douglas Kellner, Raphael Sassower, and Kuhn's theory of scientific paradigms. Additionally, as Kuhn suggests, the understanding of scientific knowledge as a language and cultural production forces a framing of such as a dynamic metadiscourse.

Theorizing From Fiske, Kellner, and Sassower: Applied to Tesla's Legacy

In looking at which theories best constitute an analysis of these marginalized discourses, I believe that media cultural studies contribute greatly to understanding the dynamics of Tesla’s legacy. According to Kellner, “media culture” “has the advantage of signifying both the nature and form of the artifacts of the culture industries . . . and their mode of production and distribution. . . .” He continues, “it avoids ideological terms like ‘mass culture’ and ‘popular culture’ . . . the term breaks down artificial barriers between the fields of cultural, media,

and communications studies. . . .” Additionally, Kellner writes, media culture “calls attention to the interconnection of culture and communications media in the constitution of media culture,” which removes the distinction between “’culture’ and ‘communication’”(*Media Culture* 35). These ideas are applied to the discourses described later, with more emphasis on the alternative media prevailing among these voices.

For application to this analysis, Kellner keys on the sociopolitical dynamic of these subcultures. As Kellner writes, “Media culture is also the site where battles are fought for the control of society.” The percolations of Tesla’s legacy will be shown to similarly energize the struggles of several subcultures against the dominant scientific paradigm. Kellner cites several other contestants in the field of cultural power: “Feminists and antifeminists, liberals and conservatives, radicals and defenders of the status quo, struggle for cultural power. . . .” He finds that, “The media are intimately connected with power and open the study of culture to the vicissitudes of politics and the slaughterhouse of history.” The media “help shape our view of the world, public opinion, values and behavior, and are thus an important forum of social power and struggle”(*Media Culture* 35). Whether in the mainstream entertainment industry, or especially with the alternative publishers, periodicals, independent video producers, and the Internet, the media becomes a conduit for these discourses to find communal voices tagged with Tesla’s legacy.

Media cultural studies initially started in the 1960s, from the early British cultural studies that looked at “how media culture was producing identities and ways of seeing and acting that integrated individuals into the mainstream culture.” This initial focus included how marginalized elements of society suffered under class inequality and systematic oppression. Studies of these “subcultures in Britain sought to search for new agents of social change”(*Media Culture* 35) Emerging from the basis of earlier studies, Kellner’s media culture theory represents a potent way of exacting Tesla’s legacy. Kellner balances aspects of dominant and oppositional readings of the subcultural productions.

Another theorist, John Fiske, locates within his concept of popular culture, a cluster of theoretical tools that can be used to further characterize the dynamics of subcultures operating under the dominant technomedia industrial paradigm.

Particularly significant as a theoretical tool, Fiske’s use of “Relevance” will help to shape the marginal discourses to be shortly examined. Used as a means of selection, relevance is popular culture “made at the interface between the cultural resources provided by capitalism and everyday life”(*Understanding Popular Culture* 129). Fiske, even more than possibly Kellner, finds a

theoretical basis by which one or more of the subcultures influenced by Tesla can take the culture industries by surprise. Specifically, several of these discourses find ready exploitation in the mainstream entertainment industry through movies such as *Independence Day, The Arrival,* and *Phenomenon* and through television programs such as *The X-Files, Dark Skies, V, Sightings,* and *Paranormal Borderline.*

Fiske refines relevance in his cultural theory by distinguishing it from aesthetic criteria. Rather, he locates relevance in "the social situation of the reader" as a quality of proximal reality. That is to say, relevance is dynamically dependent upon the time, place, and circumstances of the individual operating in a social sphere. I will demonstrate that those individuals involved in these marginal discourses find considerable relevance in their social constructions where Tesla provides (however inappropriately from the view of the mainstream sciences,) relevance in these subcultural texts. Fiske writes, "The evaluative work of popular criticism becomes social or political, not textual: the critic attempts to explore and evaluate the sociopolitical effectivities of the relevances made out of the text"(*Understanding* 151). In other words, the media production coming out of the subcultural discourses is to be evaluated for what it does, how it energizes, or whether it is polemical for the participants. Evaluating for relevance, this media production, in toto, is not considered for aesthetic suitability framed against the hegemonic hierarchy of the dominant media culture. Therefore, the four discourses that are used as examples in this treatise are structured from Fiske's theoretical position:

> The artifacts of media culture are thus not innocent entertainment, but are thoroughly ideological artifacts bound up with political rhetoric, struggles, agendas, and policies. Given their political significance and effects, it is important to learn to read media culture politically in order to decode its ideological messages and effects"(*Understanding* 93).

In paralleling Fiske, Kellner borrows from Giroux's concept of "insurgent multiculturalism" to explicate the directions his "insurgent" media studies is capable of taking. He writes, "An insurgent cultural studies enters into dialogue with members of oppressed groups in struggle and expands cultural studies to include voices usually excluded in more academic forms of cultural studies, thus striving for a more inclusive and political project"(*Media Culture* 96). On this basis, I am able to apply Kellner's theoretical tool of insurgent cultural studies to this project. Especially with the examples described shortly, Kellner's position that "a critical multiculturalism does not entail affirming that there are nothing but differences"; Kellner continues, "rather it points out that there are common forces of oppression, common

strategies of exclusion, stereotyping, and stigmatizing of oppressed groups, and thus common enemies and targets of attacks”(*Media Culture* 97). And as will be shown with the legacy of Tesla, the several discourses to be examined beautifully fit Kellner’s theoretical position, above.

Referring to the biographical history of Tesla, and the historical course of his legacy as a method of examining Tesla's effects on these cultural productions, Kellner affirms: “A multiperspectival method must necessarily be historical and should read its texts in terms of its socio-historical context and may also choose to read history in the light of the text”(*Media Culture* 99).

Yielding a different tack on approaching the cohesiveness of Tesla's legacy, I use Fiske's notion that “Discourse is now mediated and its struggles must therefore engage with the technology of mediation. But communication and information technology does not merely circulate discourse and make it available for analysis, it also produces knowledge and applies power”(Fiske, *Media Matters* 217). The salient feature to analyzing these discourses is a grasp of how subcultures find expression, appeal, and power through alternative media structures. From the simple multicopied handout through to the exercise of Internet facilities, marginalized subcultures, such as these soon-to-be explicated examples, find considerable ability to cross-connect their endeavors through modern technologies.

The Four Extended Examples Introduced

Awaiting further investigation is how the dominant media culture at once protects itself from intrusions by these discourses, yet also exploits these marginalized discourses toward its own promotions. For example, as will be further developed, both the Tesla and the UFO communities find common discourse in their mutual fear of government surveillance. Fiske explains the sociological dynamics of the fear of surveillance through such effects on media culture while some researchers, such as Vallee, explicate detailed examples of this sort of fear on the greater UFO-interest community. My examples of such fear in the Tesla community, which are also contextually shared with the UFO community, will reveal tight correlation’s with Fiske’s theory of media fear. Fiske continues, “Information technology is highly political, but its politics are not directed by its technological features alone”(*Media Matters* 219). Consider several examples from the Tesla community, as it interacts with like-minded communities on several points of governmental surveillance. Again, these discourses are more detailed later.

The first such example is that of technological “mind-control,” as fostered by the fear of the H.A.A.R.P. project,

or from fear of the “Montauk Project.”[4] The second example considers a whole subcultural production relating to the suppression of marvelously life-saving or life-improving technologies as developed by largely ignored, altruistic, or persecuted inventors. King of this media discourse is Tesla’s so-called “Free Energy” system. The third such example is that of the techno-occultic. It will be shown that apocryphal tales, such as that of the so-called “Philadelphia Experiment,” and the tales of “Area 51,” by such people as Al Bielek, Preston Nichols, John Lear, and Robert Lazar, rely heavily upon fears of the government’s oppression and ever increasing database and surveillance on its citizenry to promote their own techno-occultic belief systems. The final example of the occultic develops from these themes too, but then yields its own discursive voices.

Again, a further extension of these theoretical ideas include “The power to produce and apply norms,” writes Fiske, “as Foucault tells us, is a crucial social power”(*Media Matters* 220). Especially as a recent media force, these subcultural dynamics are readily exploited by the Hollywood entertainment industry, which in turn creates a discursive energy within these subcultures. As such, these alternate voices are finding something of mainstream acceptance, which in turn, buffets, adjusts, or otherwise steers the direction of the dominant media culture in response or capitulation to the social power of these subcultures. Typically of these alternative voices, the mainstream dominant culture finds ways of socializing them, draining them, and packaging them for mass consumerism. This only serves to energize the fringe belief systems, and the exploitation of the marginalized circles around again. Sassower then clarifies certain other issues with his cultural studies technique. The examination of Tesla will bear out these dynamics.

Sassower writes, “Postmodern technoscience is neither an assemblage of the various critiques of science and technology that have emerged in the late twentieth century, nor an attempt to provide a chronological break between modernism and a successor age. . . .” In other words, he validates some features of these subcultures, especially the pseudo-science discourses, as actively resistant to the dominant science paradigm. And he gives some merit to their concerns. He continues, "As such, then, postmodern technoscientific activities are open to public scrutiny and debate in ways that may have been inconceivable only a few decades ago”(Sassower 2). This challenging of the old-guard science and industrial establishments has certainly created

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[4] H.A.A.R.P. is the High Frequency Active Auroral Research Project, currently under development in Gokona, Alaska. It is a joint Navy and Air Force project. The former Air Force Base at Montauk, Long Island, is alleged to be a secret base of highly suspect activities.

a response ranging from disgust to hatred among an aging cohort of scientists and engineers to perceptions of mass-ignorance affecting public policy. It is from this context, that recent cultural studies are now very open to an analysis of Tesla.

For example, one of the more energetic responses in the science community has been in the realm of representation of the electronics-industrial culture through such organs as the I.E.E.E.,[5] versus the ever-more flourishing Tesla-legacy subculture. Found on the one hand are well-considered scientific critiques, and and on the other hand, histrionic polemics from both technocultures. As Sassower continues, "This leads me directly to public perceptions, political policy-making processes, and the eventual confrontation between the discourses and communities of science and politics"(2). The example of the pseudoscience discourse detailed shortly is a very good example of these subcultural productions.

Sassower observes, "I do not wish to portray a rosy picture of the intellectual world, for it is rife with competition and jealousy, rivalry and and prestige, back-biting and outright fraud"(18). This internal conflict within the scientific and industrial communities allows for considerable attack from the resistant readings by the pseudoscience discourses. More prosaic to the Tesla legacy, these discourses find a plethora of justifications from both Tesla's engineering attempts, and from his speculations on the nature of science, ancient wisdom, and man's harmony with the environment.

For example, Tesla's "Free Energy" system is very often used to provide insurgent discourses into the internal conflicts of the science and industrial communities, often clouding the meaningful issues described by the participants of those communities. The several examples shown below are taken from the abundance of small publishing houses, (and especially in the latter nineties,) small video production houses, alternative periodicals, and in particular, forums and topically related networks on the Internet. Particularly relevant are the effects by these beliefs in Tesla's scheme on the politics of science and technology. Tesla's energy system becomes, in effect, the rallying flag around which a significant subcultural production is energized.

Although a direct critique of these discourses is not within the scope of this project, a few of the examples are annotated. Rather, the effort here is to characterize this cluster of discourses in terms of their sociological effects upon the course of technological progress. I recognize that

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[5] I.E.E.E. is the Institute of Electronics and Electrical Engineers, an international society of professionals and scientists in the electrical and electronics industries founded over one hundred years ago. The I.E.E.E. has chapters on most university campuses, engineering colleges, and technical research facilities.

many of the belief systems presented in this analysis are clearly constructed of misperceptions, errant thinking, and incomplete or misapplied concepts. For example, shortly, this analysis surveys some applications of Hindu beliefs within the context of these discourses. The fact that much of what passes as Hinduistic beliefs in these cases (and clearly will not pass muster with Hindu scholars) does not in any way impinge on the validity of examining how certain perceptions of Hindu beliefs transform and energize these Tesla-related subcultural productions.

Especially prosaic in this analysis is that much of what drives these Tesla-related discourses is profoundly unscientific (albeit, the participants themselves believe that they are more “open-minded” than mainstream scholarship.) That is to say, misunderstood technology and science have far-reaching effects on the sociopolitical environment of the present. A comparison to the sociological concerns of Davidson, Vallee, Postman, and others creates open-ended questions about the role these subcultural discourses play in their theoretical schemas. This is a driving imperative of this analysis. Therefore, the applications undertaken in this analysis fall upon the recent theoretical frameworks of Kellner, Fiske, and Sassower. In their cultural studies theories, they have opened the way for this examination to pursue certain marginalized, lay-scientific, and pop-culture texts in a rigorous academic way. These texts, as features of these subcultural productions, are the means of dissident, polemic, and apologetic discourses between the several subcultural communities. At the outset, I recognize that these discourses are at great departure from the mainstream scientific community.

Looking at the controversial nature of the belief systems that are to be examined, it is instructive to relate the prevailing perceptions of these discourses as held by the mainstream science community. Acknowledging the potency of a discourse that is decoupled from empiricism, Wilhelm Reich writes, ". . . an ideologist can go on giving free rein to his fantasy, without ever performing one piece of solid work"(Reich 359). Much of what is said of Tesla is anecdotal, replaying the life of a secular saint. In the effort to characterize Tesla through these different subcultural groups, I often find the adherents of the Tesla legacy adopting otherwise contradictory ideas about Tesla or of his own views.

Here, Tesla is characterized from a normal-science apologist looking at the cluster of subcultural beliefs emerging from Tesla's legacy. "It's easy to see why Tesla should have become the focus of an effusive subculture" writes Jeff Johnson. "He was absolutely convinced of his own genius; he promoted his own personality cult of the 'great inventor' sort; he enjoyed financial success in early life, and later in life was able to indulge in a panoply of bizarre and grandiose ideas; and he achieved considerable

scientific notoriety, despite a flawed understanding of physics and other sciences"(367)

Johnson finds an explanation for some of the energy driving this dynamic: "Martin Gardner once observed that pseudo-scientists tend to fall into two groups: those motivated to defend some religious dogma and those motivated by a belief in their own greatness, unrecognized by the world, which in some cases can grow into paranoia"(366-367).

The historical framework for this discourse is derived from the communications theories of Neil Postman. The sociological framework for this analysis will be derived from Jacques Vallee's several works on the subject, from his 1979 book, *Messengers of Deception,* through his 1991 book, *Revelations.* The theoretical structure comes from Kellner. Using these tools, an understanding develops of the tension between the normal science discourses and the cluster of Tesla-related discourses. This tension creates a measurably definable boundary between them. Additionally, there are extended sociological effects stemming from the aforementioned dynamic tensions.

BRIEF BIOGRAPHICAL BACKGROUND
A Confluence of Cultures

An understanding of the life and legacy of Nikola Tesla must include a survey his formative years in that region now known as Yugoslavia. This satisfies Kellner's imperative that historical elements be contextually resolved in order to understand the projections of the resulting subcultural dynamics. This biographical sketch addresses Kellner's theoretical concerns by highlighting what I believe to be the most important aspects of Tesla's life. These are the things which bore fruit in his legacy as examined in this analysis. In other words, examining Tesla's background does two things for the cultural studies analysis: (1) it provides a framework by which the cultural studies analyst can understand a greatly misunderstood individual, (2) it provides a biographical sketch that concentrates on those details that seem to have the greatest effect on his legacy and subsequent cultural production.

Born in 1856, in Smiljan, in the Lika province of Croatia, to the family of a Serbian Orthodox Christian minister, Tesla was raised in a family rich in traditional and scholarly discourse. Tesla's mother, Duka, was illiterate; yet, she had an ear for poetry and folklore and could recite tales perfectly, even after only one hearing. Tesla inherited this gift. Nikola's father followed the Tesla-family tradition and became a minister. This brought the young Nikola into a realm of considerable intellectual stimulation and diversity. Initially, he followed his father's plans for his own career to enter the clergy; this brought to Tesla access to literature well beyond the reach of most other Croatian boys. Nikola always had an obsessive interest in reading. For example, if he read one work by a particular author, he read all obtainable works of that author. Additionally, the great confluence of languages and cultures in Croatia taught the young Nikola at least eight languages that he could speak, read and write on a scholarly level (Kelley 4).

Following his epiphanal vision of his life's work at the age of sixteen, Tesla almost exclusively wrote in English. (This vision was his idea that he could harness the power of Niagara Falls for hydroelectric power generation.) An accomplished poet himself, Tesla translated the works of other Slavic poets into English, especially the great Serbian poet, Zmaj-Jovan Jovanovich. The resulting trajectory of his legacy in this area is labeled in Figure 1 as "Poetic." As summarized above, Tesla was well educated not only in the strong sociocultural-mythic-intellectualism of his Serbo-Croatian heritage, but also in the highest theories of physics of the day. He strove throughout his career to meld the two systems of thought into something beneficial for all mankind. The basis of this passion is explained in sociological terms by Margaret Cheney in her work, *Tesla: Man Out of Time:* "Ethnic traditions are often

most tenaciously observed by transplanted minorities and the Teslas were no exception." (6) In other words, Tesla never fully allowed his Serbo-Croatian heritage (which includes spiritual and superstitious beliefs) to be replaced with materialistic-positivistic philosophies.

Historical Evaluations

Consider several coarse assertions about Tesla (as extracted from Johnson's and Cheney's writings): Tesla has often been hailed as the greatest inventor the world has ever known. He was a studious poet of his formative culture. To his own satisfaction, Tesla successfully melded Eastern mysticisms with modern applied high technologies (e.g., energy resonance theories vis-a-vis spiritualism, etc.). Tesla conversed on a scholarly level with religious leaders (Christian, Hindu, Buddhist, Theosophist, Spiritist, etc.). He became for all competing factions, the icon for Yugoslavian unification. Tesla's views on women made him the champion of pagan feminists and

the nemesis of modern gender feminists.[6] Tesla and Thomas Alva Edison supported a lifelong loathing of each other. Additionally, Tesla is (variously) credited with inventing the modern electric power grid, wireless power transmission, radio, television, X-radiation, modern rare-gas lighting, anti-gravity engines, Star-Wars death rays, atom smashers, and virtually everything else technological, except the digital computer. Johnson says, "Tesla fans credit him with a long list of inventions and discoveries. . . . Ironically, these people seem least enthusiastic toward the one area in which historians of science and technology give Tesla unqualified credit: AC power technology"(372).[7]

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[6] As a working definition, that which Tesla believed is correct feminism, is what I call the Pagan Feminists. The term is used to discriminate between two broad groups of feminists for my analysis of Tesla. The one group, which in this analysis is designated as the gender (also called modern or militant) feminists, reflects philosophy and action in academia and politics. Margaret Sanger would be a member of this group. In a broad sense, this group of feminists is what most people think of when the topic is discussed.

The pagan feminists are a majority that believe that they're more potent and powerful as women, not to be in competition with men, as such. Most importantly, they find that to be feminine requires spiritual, sexual, physical, and earth awareness. At an extreme, these women tend to be healers, witches, pagans, druids, psychics, midwives, and sensitives. They get their power by using their connectedness to nature, in a unique feminine strength.

Where Tesla enters the picture, is that his mother was a powerfully liberated pagan woman--she was intelligent, independant, and used her wiles effectively to work within her environment, culture, and relationships. She directed and controlled her cultural production. She was a highly creative innovator, herself. She was a sensitive, and a folk healer. For Tesla, his mother was the ultimate pagan feminist example.

Tesla routinely argued with feminists of the '20's, '30's about what it is to be a feminist. Particularly with Sanger, Tesla argued with her in several magazine editorials during the '20's, in a point-counterpoint format. Sanger complained that Tesla knew the power of the feminine better than the feminists. She would not accept his vision of the future of feminism.

Tesla became the defacto champion for pagan feminists, and as such, his legacy reflects that support. Tesla is perceived as a shaman; his mother is regarded as a goddess in some circles. Yet, Tesla is virtually ignored by many modern feminists, as an archaic construct of old cultural values asserting in their own emerging paradigms. Tesla counters Sanger by feeling the undercurrent of the human need for a particular structure of feminism, one that contributes to increasing civilization--toward a technological civilization made humane through a cultural production manifested through the pagan feminists. Tesla believed the current feminist cross-cultural discourses are a necessary but ultimately misguided response to technology.

[7] See also, Cheney, 2ff

Tesla's Formative Philosophy of Science and Consequence

Tesla was at a great departure from the modern physics paradigm. Kuhn defines this paradigm in its historical basis: "Thermodynamics was born from the collision of two existing nineteenth-century physical theories, and quantum mechanics from a variety of difficulties surrounding black-body radiation, specific heats, and the photoelectric effect"(67). That is to say, Kuhn succinctly identifies the root of the modern physics paradigm. However, modern quantum physics is a paradigm that Tesla chose not to participate in. Kuhn validates one reason why Tesla may have rejected this new physics:

> Out-of-date theories are not in principle unscientific because they have been discarded. . . . Rather than seeking the permanent contributions of an older science to our present vantage, they attempt to display the historical integrity of that science in its own time. They ask, for example, not about the relation between his views and those of his group, i.e., his teachers, contemporaries, and immediate successors in the sciences"(2-3).

Throughout his career, Tesla held fast to the scientific positivism of his early training. His adherence to a strong personal positive philosophy of science brought along the conceptual baggage of such ideas as luminiferous ether. This is a belief he held until his dying day—despite the abandonment of the ether concept in favor of relativistic theories starting at the turn of this century. In the first extended example to be explicated, in what I call in part, "Tesla's Vedic Science," it will be shown why Tesla chose not to adopt the new theories. Even more damaging to his career, his stalwart rejection of transverse electromagnetic radiation theory and his promotion of scalar electromagnetic theory was seen by the new quantum physicists to be obsolete, if not unquestionably ludicrous. An examination of Tesla's philosophical orientations about science yields significant illumination about the two principal trajectories in the scientific legacy of Tesla: the positivists, that founded the American engineering community, and the fringe pseudosciences of the occult, a source of the new alternative sciences.

In terms of a literary tradition, there is a vast quantity of written material from within the context of Tesla's legacy. Tesla not only contributed considerable writings that promote this literary consequence, but stood by mute while a large number of occultists, Eastern mystics, spiritists and opportunists laid claim to Tesla and used him liberally to justify their own agendas.

For his part, Tesla believed that humans are essentially automatons, subject to the most analytical and predictive behavioral sciences. Tesla writes, "While I have

failed to obtain any evidence in support of the contentions of psychologists and spiritualists, I have proved to my complete satisfaction the automatism of life, not only through continuous observations of individual actions, but even more conclusively through certain generalizations"(My Inventions 105). As with Newton, and as with many other inventors and innovators, Tesla in his turn subscribed to both a spiritualism and a naturalism. Yet, it is only with Tesla, that the bifurcation in his personal beliefs greatly energized the resulting discourses.

A Positivist's Career

Tesla's belief in technology, materialism, and social behavior should have aligned him perfectly with the scientific and engineering communities in this country during the 1890s. At one time, he was even titular head of that American community. Tesla's golden hour was his overwhelming victory in what is historically described as the "War of the Currents," the opposition of the engineers who supported alternating current (AC) versus the engineers who supported direct current (DC) for the transmission of electrical power. It was Westinghouse versus General Electric. Tesla versus Edison. Westinghouse versus J. P. Morgan. It was a war over who would succeed in harnessing the Niagara Falls to produce electric power for Buffalo, New York. This showcase example defined the power paradigm. Using Tesla's AC patents, Westinghouse won the Niagara Falls contracts; by 1893, AC was clearly the champion over DC. Tesla became an international celebrity achieving "superstar" status. The American Institute of Electrical Engineers (AIEE) invited Tesla to speak before them in 1893, where he gave them a presentation of AC technology that attracted a legion of engineers entranced at his every utterance. As the figurehead of the AIEE, it seemed that Tesla would define the positivist agenda in America. Yet, it was not to be (Cheney 38ff).

For Tesla was a victim of the self-same robber-baron Social-Darwinism philosophy that was prevalent in America—a philosophy that he used so well to win the War of the Currents. (In other words, he effectively appealed to the engineering community of the day. He also appealed to the media, propagandizing and pandering to a willing public.) For even as Edison was forced to buy licensing rights from Tesla to produce AC, Tesla's star was fading. Even though he won one philosophically technological war, in the larger picture, the big players such as J. P. Morgan were still dominant. Tesla was in such a socially connected sphere and enjoyed such familiarity with the media that he failed to recognize the fact that he was cast adrift from behind the scenes by the financial power brokers and engineering communities that publicly supported him. A major feature of this separation between Tesla and the American industrial community, despite Tesla's genuine belief that he was

entirely in accord with that power agenda, was a perception by those industrial power-brokers that Tesla was occultic, superstitious, and even a pseudoscientist. In this respect, Tesla through his speculations was his own worst enemy. What is significant about the foregoing perception is that it is the basis of several of the major trajectories in the legacy of Tesla (Cheney 281ff).

The Legacy of Tesla

It will be exhibited in a subsequent section that Tesla's superstitious habits were largely derived from his relationship with his mother. Of interest here are Tesla's religious views and superstitions relative to his technological beliefs. Tesla was quite familiar with a wide variety of religious structures. As reviewed above, Tesla was a member of a clerical-scholarly family. He grew up in a region crossed with Christian Orthodoxy, Roman Catholicism, Protestantism, Christian tradition, Islam, Islamic tradition, and from the East, Hinduism, Buddhism, and various Eastern mysticisms. It is largely from this structural base that Tesla sought to combine such knowledge with high technology throughout his career. Unfortunately for Tesla, the pragmatic American industrial engine was not prepared to be fueled by Tesla's theoretical conclusions. For example, "He believed his own mechanistic concept of life to be 'one with the teachings of Buddha and the Sermon on the Mount'"(Cheney 244). In other words, one may cite literally hundreds of quoted statements of Tesla's that describe in strongly Eastern religious terms, some future utopian society. Scholars should readily recognize a monism in Tesla's framework. For example, one of the chief mitigating factors against Tesla's achieving a successful financial capital resource base is that these public pronouncements would stall those seeking a return on their investments with Tesla vis-a-vis Tesla's claims for universally free and unlimited power. Why invest in Tesla's technologies if the result is not profitable? Yet, Tesla sometimes seemed to be almost pouting over the fact that investors usually turned away from him as he promoted his techno-religious ideals.

This free energy aspect of Tesla's legacy has greatly energized the marginalized discourses, especially where humanitarian parallels and alternative-energy researches are emphasized. The humanitarian discourses include those that exhibit Tesla as saintly, long-suffering, a modern martyr for his cause. A survey of related literature also shows this theme operating among other twentieth-century scientists as unsung Tesla-type heroes. For example, Helga Morrow writes of her father, (who she states as having known Tesla,) "Like most brilliant scientists, he forfeited power, glory and monetary compensation to do his work"(Morrow 2). Numerous authors and researchers have paralleled Tesla's free-energy efforts. Consistently, they describe themselves

as sacrificing careers, families, prestige, and money to follow Tesla's ideals. Stan Deyo writes, "As I sat and pondered the weight of the years of discovery and understanding that had led me to that moment there in the study, I suddenly felt very tired. . . very old for my age of thirty-three"(Deyo and Deyo 8). As exhibited with the two examples of Morrow and Deyo above, I have observed that many adherents to Tesla's ideals have also experienced something of a martyr complex.

In any case, Tesla, especially after the turn of the century, had trouble getting financial support for his technical innovations because he was no longer perceived as a practical scientist and engineer. Rather, he became perceived more and more by the public as an obsessive visionary, which in turn had disasterous consequences with his potential backers.

THE NON-SCIENCE DISCOURSES

The Formation of Tesla's World View

Since much of the subsequent legacy of Tesla depends on his personal behaviors, some examination and explanation of his behaviors and superstitions at this juncture is quite appropriate. Many professionals across many disciplines have tried to analyze Tesla's behaviors and beliefs. Tesla is a source of fascination for psychologists in particular. They often find within the pathology of Tesla, a cluster of neuroses and obsessive behaviors. These aspects of Tesla's personality are a rich source for energizing the subsequent discourses. One of the more interesting attempts to psychoanalyze Tesla is cited by Margaret Cheney in her Tesla biography. The following is extracted from that work. Dr. Jule Eisenbud analyzed Tesla in Freudian and Jungian terms. In an article in the *Journal of the American Society for Psychical Research,* Eisenbud examined Tesla's neuroses relative to his maternal relationship. Eisenbud finds in Tesla's life "many signs of an emotionally and physically deprived infantile nursing period. . . . seen frequently in persons who are known clinically as obsessional neurotics . . . marked all his relationships to and attitudes toward mother symbols and mother substitutes"(Cheney 230). Eisenbud's explanation of Tesla's obsessive behavior is offered to help understand why Tesla lived a life rife with superstitious habits. Eisenbud blames Tesla's mother as evidence through psychological explanations.

For purposes of understanding the subsequent cultural production, I am not interested in a psychoanalysis of Tesla. I believe that allowing Tesla to act as his own apologist from his own writings provides a much more enriching understanding of the basis of the several trajectories of his legacy. More concertly, Duka Tesla (his mother) was superstitious herself; and Nikola learned these behaviors through long-term proximal exposure to his mother's behavior, not necessarily through a Freudian or Jungian analysis of the mother-son pathology (Tesla, *Inventions* 30-35). In other words, I appeal to a more pragmatic view of Tesla, one that Tesla himself used. Consider the following as Tesla's affirmation as to why he was so superstitious, phobic about germs, etc.

Tesla himself offers additional background concerning his phobic behaviors (for example, his fear of germs, his intensive numerological beliefs); he states that they yielded an acquired disciplinary skill greatly aiding his inventive ability relative to civilized ideals extant within the nineteenth century. What follows, in Tesla's own words, is a description of his life as a sufferer of synesthesia (Cheney 21-22). He writes:

> In my boyhood I suffered from a peculiar affliction due to the appearance of images, often accompanied by strong flashes of light, which

> marred the sight of real objects and interfered with my thought and action. They were pictures of things and scenes which I had really seen, never of those I imagined. When a word was spoken to me the image of the object it designated would present itself vividly to my vision and sometimes I was quite unable to distinguish whether what I saw was tangible or not. This caused me great discomfort and anxiety (*Inventions* 31).
>
> * * *
>
> To free myself of these tormenting appearances, I tried to concentrate my mind on something else I had seen, and in this way I would of then obtain temporary relief; but in order to get it I had to conjure continuously new images. . . . This I did constantly until I was about seventeen when my thoughts turned seriously to invention. Then I observed to my delight that I could visualize with the greatest facility. I needed no models, drawings or experiments. Thus I have been led unconsciously to evolve what I consider a new method of materializing inventive concepts and ideas, which is radically opposite to the purely experimental and is in my opinion ever so much expeditious and efficient (*Inventions* 32-33).
>
> * * *
>
> An inventor's endeavor is essentially lifesaving. Whether he harnesses forces, improves devices, or provides new comforts and conveniences, he is adding to the safety of our existence. He is also better qualified than the average individual to protect himself in peril, for he is observant and resourceful (*Inventions* 42).

As the historical events have unfolded, Tesla's legacy is strongly affected by his legendary meditative imageries.

An example of Sassower's theoretical concern about the politics of science is shown here, as Tesla attacked his detractors. Again, his writings and polemics against his peers had a marked effect on his legacy. Tesla writes in his autobiography, "'The Magnifying Transmitter' was the product of labors extending through years, having for their chief object the solution of problems which are infinitely more important to mankind than mere industrial development"(*Inventions* 81).

He continues:

> I am unwilling to accord to some small-minded and jealous individuals the satisfaction of having thwarted my efforts. These men are to me nothing more than microbes of a nasty disease. My project was retarded by the laws of nature. The world was not prepared for it. It was too far ahead of time. But the same laws will prevail in the end and make it a triumphal success (*Inventions* 91).

The final source of effect on Tesla's legacy are his notions of humanitarianism. Tesla's vision of a new humanity revolves about three problems of the expenditure of life energy by humans, both individually and collectively. The three problems and their projected solutions are amply analyzed in Tesla's classic work, "The Problem of Increasing Human Energy," serially published starting in June 1895. The final installment was published in November 1895. The feature article classifies human action, motion, the mass of human society, and survivability in terms of thermodynamics and Newton's laws. It can be safely stated that this work is Tesla's techno-utopian manifesto; all of his future writings were spent extending the themes of this controversial opus. Tesla summarizes the three solutions for the problems that he identifies as: food, peace, and work (*Problem* 175-216). These philosophical imperatives will now be examined in Tesla's legacy.

FOUR TRAJECTORIES OF CONSEQUENCE— THE EXTENDED EXAMPLES

First Example: Metadiscourse of Eastern Mysticism- Tesla's Vedic Science

The most intriguing of Tesla's inventions are the ones that got away. — Jeff Johnson, 'Extraordinary Science'

I have a singular advantage in the area of modern technology vis-a-vis the humanities' focus on culture. There seems to be an aversion to examining the considerable aspects of modern technology relative to the humanistic disciplines, outside of media culture studies. The whole field of cultural production relative to technology is either uninteresting to academicians in the humanities or only in a certain school of sociology does one find serious interest in the effects of technology. That is to say, there is considerable interest in the sociological discourses on the mass media. Reich writes, "How is it to be explained that of the millions of car drivers, radio listeners, etc., only very few know the name of the inventor of the car and the radio, whereas every child knows the name of the generals of the political plague?"(322). Therefore, my own technical background emboldens me to address this understanding. It is with a view toward extending the concept of sociotechnology beyond mere media dynamics that a cluster of sociotechnical beliefs are to be examined through the work of Toby Grotz. In preparation for understanding Grotz, however, some background of the present science community's response to Tesla's legacy is required next.

For example, this country has experienced a prolific output on the part of Marshall McLuhan during the 1950s through the 1970s about the sociological impact of the (electronic) mass media. And in terms of recent cultural studies, McLuhan had a significant influence on Jean Baudrillard. However, a new paradigm is emerging in academic studies coming out of a completely different college: a school of cultural philosophy, which has been growing considerably over the last two decades. This philosophical school is represented by Toby Grotz, Brian O'Leary, John O'Neill, Fritjof Capra, Jacques Vallee, Nichelson and others, who are well known in both the engineering disciplines and by physicists.

As a cohort, these men are affecting a union between the disciplines traditionally found in the humanities and the dynamics of high technology. That is to say, they offer a philosophical bridge to that which has normally evolved through economic and sociological studies (e.g., Marxism.) This new activity springs out of that which Thomas Kuhn calls "normal science." According to Kuhn, "'normal science' means research firmly based upon one or more past scientific achievements, achievements that some particular

scientific community acknowledges for a time as supplying the foundation for its further practice"(10). For purposes of this paper, the same term will be applied to the engineering community of which, Toby Grotz is a member. Of significance to the discourses, normal science is also termed by its New Age opposition (in a resistant reading) the "military-industrial complex." For example, John Chambers writes of one of these men, "In the mid-seventies O'Leary became increasingly dissatisfied with the role of purveyor of what he calls the 'reductionistic' science of the old paradigm, and more and more curious about the field of paranormal phenomena." Chambers continues, "in that role he has observed the burgeonings of what he calls a 'new science,' based on a broader 'laws-of-science-breaking' conception of human conscienceness; in so doing he feels he has begun, along with many others, to map out the contours of an emerging new 'mega' paradigm for humankind"(56).

Not that the normal science community is the villain of the peace, rather, it has largely acknowledged Tesla's contributions only in a narrow engineering sense. Awareness of Tesla's marginalized discourses derives from a group of former positivists that still hold high favor within that community. These thinkers have struck out in search of the solution to what Tesla called in an article of the same name, "The Problem of Increasing Human Energy." Grotz especially seeks to implement a whole new field in the construction and networking of human society. He firmly believes that every human being has the birthright to unlimited energy and resources. At such a level, there will be a whole new set of societal, political, economic, and artistic interrelations between human beings. It would seem that the central problem with this scheme is ironically that it is possible. I will examine this growing effort through the philosophical beliefs in the seminal texts of Nikola Tesla. As the first part of this analysis of the cultural production is shown to be about the influence of eastern languages through Tesla, it is very important to keep in mind that this trajectory of Tesla's legacy is impacting a very sensitive and critical area of the normal science and industrial community. The course of this complex has been changing in recent years, due to many factors, not the least of which, is Tesla.

Tesla successfully combined elements of the several disparate philosophies of Eastern mysticisms, logical positivism, social Darwinism, phenomenalism, and existentialism into a codified whole, well practiced in his own life. The most pervasive combining of Eastern mysticisms with modern high technology in Tesla's world view is his belief that all modern physics and higher engineering disciplines ultimately coincide with Vedic Science. Grotz writes,

> Nikola Tesla used ancient Sanskrit terminology in his descriptions of natural phenomena. As early as 1891 Tesla described the universe as a kinetic

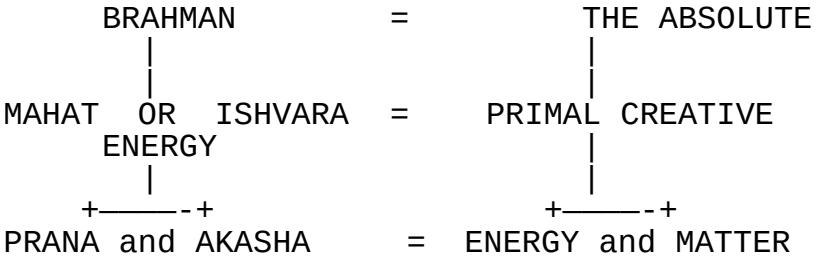
> system filled with energy which could be harnessed at any location. His concepts during the following years were greatly influenced by the teachings of Swami Vivekananda. Swami Vivekananda was the first of a succession of eastern yogi's who brought Vedic philosophy and religion to the west. After meeting the Swami and after continued study of the Eastern view of the mechanisms driving the material world, Tesla began using the Sanskrit words Akasha, Prana, and the concept of a luminiferous ether to describe the source, existence and construction of matter (*Influence,* electronic transcription).

For example, why choose an AC power line frequency of 60 Hertz (Hz)? When Westinghouse successfully negotiated with Tesla for the use of Tesla's alternating current (AC) patents, the Westinghouse engineers in Pittsburgh were using AC systems operating at 133 Hz. Tesla went down to Pittsburgh to bicker, to coerce, to argue, to prove his choice of 60 Hz. Now one may argue that Tesla could show in mathematically practical ways that the material sciences of that day lent the most efficient uses at the lower 60 Hz value. Every time anyone of them argued for 133 Hz, Tesla would prove 60 Hz to be much more practical. So the Westinghouse engineers were won over to 60 Hz. But why 60 Hz? If one can argue for this frequency, why not a nearby frequency such as 55 Hz? Or 70 Hz? Yet, Tesla was adamant that 60Hz be the AC frequency standard. As a result, 60 Hz is the frequency standard in use in North America today. So why 60 Hz? Familiar with Hindu beliefs, Tesla chose 60 Hz as the basis for his AC architecture because he genuinely believed that 60 Hz is the "fundamental vibration of the universe." That is to say, 60 Hz is the so-called "OM" vibration. He chose 60 Hz to harmonize with the universe in some natural way. Bruce Cathie continues, "He had a vision of the cosmos as consisting of myriad octaves of electrical vibration. It was his desire to be able to understand the interplay of harmonic oscillations that formed the basis of the universe. The lower octaves he had already explored with his 60 cycle-per-second alternating current. He was now ready to reach into the unknown and probe into the regions of ultra high frequency of light and beyond"(104).

The example just described is just one of several such good examples of how eastern mysticism affected the choices that Tesla made regarding implementation of his theories. However, it is possible to very accurately generalize Tesla's religious beliefs into virtually all areas of his inventiveness.

Grotz details a singular episode in the life of Tesla that not only markedly reveals Tesla's knowledge of Vedic Science, but shows that Tesla had already assimilated much of Vedic philosophy in his world view. Grotz describes the occasion when a Sanskrit scholar and holy man toured the United States in 1893. Grotz writes:

> Swami Vivekananda was born in Calcutta, India in 1863. He was inspired by his teacher, Ramakrishna to serve men as visible manifestations of God. In 1893 Swami Vivekananda began a tour of the west by attending the Parliament of Religions held in Chicago. During the three years that he toured the United States and Europe, Vivekananda met with many of the well known scientists of the time including Lord Kelvin and Nikola Tesla. Swami Vivekananda was hopeful that Tesla would be able to show that what we call matter is simply potential energy because that would reconcile the teachings of the Vedas with modern science. The Swami realized that "In that case, the Vedantic cosmology [would] be placed on the surest of foundations." The harmony between Vedantic theories and western science was explained by the following diagram:



> Tesla understood the Sanskrit terminology and philosophy and found that it was a good means to describe the physical mechanisms of the universe as seen through his eyes. It would behoove those who would attempt to understand the science behind the inventions of Nikola Tesla to study Sanskrit and Vedic philosophy (*Influence,* electronic transcription).

The Vedic philosophy so well assimilated by Tesla prevented him from ever accepting the modern quantum physics and electromagnetic models over the concept of the luminiferous ether. But is adherence to the belief in the ether obsolete? Some late evidence is coming out of the new physics that the ether may be coming back as a theoretical model, though not as the mechanical medium of light propagation. We may well be coming full circle back to Tesla.

To generalize at one more level, Grotz quotes another swami, also on tour with Swami Vivekananda. According to Swami Nikhilananda:

> Nikola Tesla, . . ., was much impressed to hear from the Swami his explanation of the Samkhya cosmogony and the theory of cycles given by the Hindus. He was particularly struck by the resemblance between the Samkhya theory of matter and energy and that of modern physics. . . . Mr.

> Tesla was charmed to hear about the Vedantic Prana and Akasha and the Kalpas, which according to him are the only theories modern science can entertain. . . . Mr. Tesla thinks he can demonstrate that mathematically that force and matter are reducible to potential energy (*Influence,* electronic transcription).

Grotz finds parallel structures from within Christian mysticisms. He contrasts the two mysticisms. In terms of his religious views, Tesla was not completely enraptured with the Eastern mysticisms. His eclectic belief system was well balanced with the Christian mysteries, too. It is interesting that Tesla's legendary generosity and humility concerning his fellow man was the major factor that short circuited his destiny. For example, Tesla released George Westinghouse from the royalties based on estimates of horsepower sold by Westinghouse. This action cost Tesla, according to Cheney, about $6 million. Social Darwinism consumes the saintly. Tesla talked frequently in biblical terms. Yet, Tesla's life circumstances parallels many biblical stories. Grotz writes,

> Tesla's visions have been delayed for 89 years. The squabbling started with Thomas Edison, J. P. Morgan and Nikola Tesla himself. It continues to this day. Perhaps the reason for the delay of wireless power transmission or free energy devices lies even deeper within the human psyche. Is it possible that we can compare the Tesla story to biblical story? (*Influence,* electronic transcription).

Grotz cites Bruce Gordan to explicate this. He writes, "In Gordan's analysis Tesla's attempt at building a prototype magnifying transmitter parallels Genesis 11:1-9." That is to say, he describes the ultimate manifestation of applied Tesla ideals as the modern tower of Babel. The parallelisms are much tighter than even described here. Gordan says, "The message; human curiosity and technological derring-do makes God nervous; God demolishes project, confounds language" (*Influence,* electronic transcription).

Gordan illustrates the following scenario:

"ISOMORPHISM"

BIBLE STORY	TESLA TALE
Human Efforts	Tesla Projects
Tower of Babel	Wardenclyffe Tower
God	Money (J. P. Morgan)
Demolition & Confounding to maintain Status Quo of God drunk on power above, of humanity groveling in ignorance below.	Withdrawal of Morgan's Financial Support and subsequent suppression of Tesla's work in orthodox science & engineering circles
	Perpetuation of mediocre technology for energy generation, storage, distribution, to maintain favorable cash flow for existing system for energy continued combustion of of scarce fuels, keep management by forcing consumers, paying, paying, ... (*Influence*).

At this juncture, Grotz reveals how he, as an electrical engineer concerned about his industry's effect on cultural production, is a direct beneficiary of Tesla's legacy. Grotz continues, "We might postulate that technological developments do not occur until the planet is ready." He goes on to describe the features of the Gaia theory that our earth is alive due to life activity itself. Grotz writes, "'Thousands of years ago, . . . , sorcerers became aware that the Earth was sentient and that its awareness could affect the awareness of humans.' By implication of reciprocity the reverse could be true." Tesla himself was aware of this occultic belief, and fervently promoted it throughout his productive career. More prosaic, Grotz says, "The group or collective unconscious is still struggling with the result of quantum and relativity theory"(*Influence,* electronic transcription). He then describes in considerable detail about his own efforts as a highly placed chairman in the Institute of Electrical and Electronics Engineers (I.E.E.E.) in recent years to duplicate the Tesla-designed free-energy power station originally at Long Island.

This philosophical advance mixing the Vedic with Maxwell's equations has created alternative discourses within the community of physicists. Most notable in my mind is Fritjof Capra's *The Tao of Physics.* In addition to the metaphysical-physicists that have created a strong literary

tradition, there are "conventional" quantum physicists, such as Capra, who are fueling a growing literary production that is beginning to cross over to the mainstream lay reader and the academic, alike. For example, several popular authors who have considerable credibility are focusing their attention on this kind of literature. A most noteworthy example is that of Robert Anton Wilson. A variety of examples of this literature examined from historical and technical criticisms will show how widespread and well developed this literature is for the technically initiated. People as disparate as those on the Committee of the Scientific Investigation for the Claims of the Paranormal (CSICOP) and mystics, ranging from physicists to geomancers, and even fundamentalists, are contributing and responding to this dynamic literature.

To review, there are four aspects of the legacy of Tesla that I examine within the context of the literary tradition that developed along the nonscience discourses. There are three additional representative examples chosen for this analysis, that now follow.

Second Example: Discourse of Pseudo Sciences

> I had heard what they had to say, and a curious tale it was, a space-opera woven with prophetic inspiration, a diatribe against modern life through which the wind of forgotten tradition blows.
> — Jacques Vallee, *Messengers of Deception*

The second of these examples is of Michael X (typical of these authors, they use identity-obscuring pen names), a prolific author in the literary tradition of the pseudo-sciences or fringe sciences. To establish a sense of completeness in this survey (prior to detailing Michael X), I provide some limited references to several of the most recent tales of apocryphal adventure in the Tesla-derived pseudo-sciences: the so-called "Philadelphia Experiment," the "Montauk Project," and the U.S. Army's H.A.A.R.P. Project. These sources are offered to exhibit compatible literature to that of Michael X. [8]

Systematically, one can apply much about the following analysis of Michael X to those authors writing in genre of the Philadelphia Experiment. A proper analysis of the surrounding literature, video, and lecture circuit, is beyond the scope of this treatise. Suffice it to say, I have concluded that one of this genre's authors, Preston Nichols, is a fine engineer himself, but creates a gestalt of pseudo-science in his literary output. Also, another prolific contributor to this dynamic, Al Bielek, is at best, an occult-technologist. The Philadelphia Experiment genre

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[8] (Elswick ed.,HAARP Resource Guide, 1995 edition; Moore, and Berlitz, The Philadelphia Experiment ; Nichols and Moon, The Montauk Project)

is one of the best sources of cross-pollination across the several discourses. Finally, the original experiments themselves were supposed to have occurred in 1943 as a U.S. Naval project to make a ship invisible to radar; the results were supposed to have been in the realm of "Star Trek" physics (Moore and Berlitz 49-51). The variations resulting from the Philadelphia Experiment, through the Montauk Project, have tagged techno-conspiratorial beliefs (e.g., mind control implants or similar technologies), associations with Aleister Crowley, and Scientology, as prominent features of so-called Tesla technologies (Nichols and Moon 11ff).

Michael X liberally uses Tesla to justify the many technological schemes that X promotes and sells to a certain kind of resistant reader. A survey of every book by Michael X reveals an invocation of the authority of Tesla at least somewhere in the text. This is typical of a wide range of similar authors surveyed. In other words, the more strongly Tesla's ideas are invoked in these texts, the more marginalized are the beliefs being presented. Michael X's book *Tesla: Man of Mystery* will be analyzed here for its value in two of the marginalized discourses of the latter twentieth century—the literature of the pseudo-sciences in cultural production; and, the literature of the UFO phenomenon. This cultural production is now to be shown as consistent with Fiske's notion of insurgent multiculturalism.

Typical of this kind of literature, Michael X lays claim to the authority of the central figure, in this case, Tesla, as an oppressed martyr of sorts. The "oppressor" is almost always conventional authority or wisdom that seeks to preserve the status quo in the face of radical new advances for humanity. Michael X writes, "It is alleged that immediately after his death, his files were seized by a certain Agency, which to this day, keeps these secrets locked away from their use by mankind, because fears of Vested Interests that the development of these inventions might cause them economic ruin." Also typical of this kind of literature, Michael X uses the language of the techno-occultic. He attempts to include more than the pseudo-science audience by appealing to a philosophically compatible audience—the occultists. For example, he writes, "During his latter work on this plane, Tesla was secretive about most of his inventions, . . . Some have speculated that he [Tesla] was brought here as an infant from another planet, others contend that he was a mystic who based his inventions upon hunches and phantom images which constantly floated through his mind"(4). Additionally, Michael X says, "The information you are about to read has been communicated to me through friends on both your physical, and OTHER planes, to which I am attuned"(6). Of Tesla, the martyr, Michael X writes, "During his lifetime he was scorned and abused by 95% of the scientific community, a community to which he felt he could help and contribute"(5).

Michael X continues:

> Tesla's inventions, if developed, will make nuclear experiments obsolete [note the similar theme with Toby Grotz]; they will render warfare impossible, making each country safe within its borders, free to develop its particular culture in peace and harmony; they will open up interplanetary communication to everyone immediately; they will permit the space people to send us teachers [note Jacques Vallee's warning] who can train the entire population of this planet in every phase of art, philosophy, science, and Universal Law, known in this solar system"(9).

Michael X uses claims of Tesla's genius with alternate forms of technology as a skillful basis for any one of many technological agendas. In my survey of this literature, I find two prevailing themes. The first of these is what I will describe as the "universal communication system." Michael X presents his variation on that theme as:

> The illustration has been copied from a rough sketch (not to scale) drawn by Arthur H. Matthews of the basic concept of the design for a Space Communication Set which would increase the speed of electrical waves to 27 times that of light, as first conceived by Nikola Tesla in 1898, with the objective of communicating with the Planet Venus. Due to other pressures of other work, however, the first working model was not built by Tesla until 1918. In 1938, Arthur H. Matthews, under Tesla's guidance, built an improved version of this device at Sanford, in the Province of Quebec, Canada"(21).

An extension of these beliefs are also located in the Japanese cult, the Aum Shinrikyo. This cult was responsible for the Sarin gas attack in a Tokyo subway in 1995. Writing for the July 1997 issue of the *Fortean Times,* David Guyatt assesses Tesla's major influence upon this cult's extremist beliefs. He writes:

> It is claimed that Aum are intimately involved in the development of futuristic doomsday weapons that make today's nuclear missiles look like children's toys.... they include the use of electromagnetic pulse, earthquake inducing and 'plasma weapons' being covertly tested [by the major powers] in remote regions of the world. Aum's interest in weapons of mass destruction was considered serious enough to merit ... a special investigation by the U.S. Senate Permanent Subcommittee on Investigations. Chaired by Senator Sam Nunn,....Their 100-page report was published in October 1995. (35)

The Senate's investigation uncovered extensive beliefs about Tesla's speculative technologies. Guyatt continues:

> The Nunn report, ... revealed the cult's fascination for so-called Tesla weapons — after their inventor, Nikola Tesla. The Senate report describes Aum's visits to the New York-based [9] International Tesla Society (ITS), where they sought to obtain a number of his books, patents, and papers. A representative of the ITS told Senate investigators of Aum's interest in Tesla's experiments with 'resonating frequencies', adding that 'Tesla had experimented in creating earthquakes'. Significantly, the report also reiterates Tesla's claim that 'with [this] technology he could 'split the world' in two....(35)

While the Aum cult is specifically interested in recovering Tesla's speculative technologies concerning earthquakes, Guyatt also finds them interested in other purported Tesla-derived energy-beam technologies. He says:

> The report mentions Tesla's development of a 'ray gun in the 1930's, which was actually a [p]article beam accelerator',[sic] and which was said to be able to 'shoot down an airplane at 200 miles'.... Aum personnal also travelled to the Tesla Museum in Belgrade to research the so-called Tesla Coil — a device used for amplifying alternating currents — where they uncovered details of Tesla's work on 'high energy voltage transmission and wave amplification, which Tesla asserted could be used to create seismological disturbances'. (36)

Guyatt goes on to summarize many of Tesla's ideas as they affect the alternative science subcultures, as already outlined in this analysis, especially through Cheney and Johnson. Note that this cult is acting on the beliefs extending forward from the legacy of Tesla's speculative ideas. In fact, that Tesla never actually built working prototypes of these technologies, is largely irrelevant to the actions of numerous subcultures—particularly those subcultures revealed in this analysis.

Third Example:
Discourse of UFO Phenomenon

To be fair to Michael X, that I have not found the sources that X cites for this invention does not mean that Tesla would not have been in a position to deny the existence of the aforementioned device. In fact, it was in 1899, while at Little London, Tesla claimed to have observed intelligent signals from Mars. In any case, whether the universal communication system is entirely under human

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[9] Note: To clarify accuracy, The International Tesla Society is based in Colorado Springs, CO. However, it is The Tesla Memorial Society that is based in New York.

control or involves space aliens, the common threads include "rediscovered" arcane technologies, secret or oppressed experimenters, and always the message. That is to say, the message is the second prevailing theme that I have identified in my survey. The message is usually some variant of a techno-utopian philosophy that is meant to warn or prepare mankind for universal peace. The following example is quite typical of the kind of "experimenter" that authors of Michael X's genre exhibit:

> We recently received a set of plans from a former pupil of Nikola Tesla who believes that a space ship, working on the principles of the "flying saucers," can actually be constructed. He bases his plans, he told us, upon existing files he secretly obtained shortly before Tesla's death, and before these could be seized by the authorities. He and Tesla had been very close friends and had worked together on a number of projects. This pupil, however, told us that we must not reveal his name, since his work with the invention is yet in the experimental stages. He also warned us that the principles used in this invention could actually be harmful and very dangerous, considering the "field effect" which he describes as an "anti-electromagnetic field drive." Although the basic scientific principles are technical, we feel these should be presented to the reader as a matter of record. We have shown this document to a few persons whose scientific knowledge is great, and have been told that the principles advanced in the Tesla Space Drive are sound. They, too, however, warned us of the dangers involved"(Michael X 21).

The techno-utopian message that the experimenter cited above promotes is based on "received" transmissions (using the prototype Tesla Space Communication Set) from the space people on Venus. It is summarized as follows:

> We were saddened to find that the Earth people had used the gifts of Tesla and other great inventors only to satisfy their greed and lust for power, that the same evil conditions existed on Earth and that its people continued to expend their energy on wars and killing their own kind, which is contrary to God's Law which clearly states: Thou shalt not kill. . . . To avert hatred and wars, you must learn to remove every trace of national pride and racial discrimination, for there is, in fact, only one race in the entire Universe—that of mankind whom God created"(Michael X 21).

Consider an additional example. Jacques Vallee also finds numerous pseudoscientific "experimenters." While I have detailed something of Michael X, Vallee quotes a similar writer, called Mr. T, who has devised a scheme for an antigravity drive for a homemade flying saucer: "I'll

tell you what produces gravity. It's a frequency range in the electromagnetic spectrum, between infrared and the radar band. In terms of wavelengths, .3 to 4.3 millimeters. If you generate electromagnetic radiation in that range, you'll get gravity effects"(*Messengers* 109). Vallee says that the "link" between gravity and millimeter-waves is "perfectly absurd." I agree; in fact, this millimeter-wave spectral range is one of the most important bands useful to radio astronomers. Vallee says, "Discovering the secret of the UFO propulsion mechanism could be such a military breakthrough that any research project connected with it would enjoy the highest level of classification"(Messengers 227).

Of particular importance to any analysis of the Tesla legacy is that an energetic cultural production is engaged in establishing the preeminence of Tesla as the source of alternative modes of propulsion for ultra high-tech UFO-type vehicles for military uses. The importance here is couched in the fact that this central idea is the core of one of the significant discourses emerging from Tesla's speculations, and forming a sociological energy toward the emerging transcendental ethical paradigm.

The marginalization of Tesla's speculative ideas has borne fruit in discourses that are making end-runs around normal science. The popularization of these aspects of Tesla's legacy are spearheaded by what I will call, "Star Trek" physics. Not even approaching the strength of a pseudoscience, Star Trek physics is a compendium of scientific-sounding ideas that are mostly meant to solve problems in dramatic scripting and entertainment. Centrally located within this discourse, a cultural production has found both a linguistic modality and a large following in the person of Robert Lazar. Lazar weaves together elements of Star Trek physics and UFO conspiracies with a healthy infusion of Tesla's speculative legacy. Lazar purports to be a nuclear physicist who formerly worked for the U.S. Department of the Navy at a secret research base in Nevada, commonly called "Area 51" (Lazar video).[10] Many people who adhere to Tesla's ideas, or to conspiratorial UFO theories, or to beliefs in marginalized science theories find very effective cross-pollination of their beliefs through the assertions of Bob Lazar. However, there is no sign that these discourses are changing normal science. As such, this only fuels the cultural production. As Kuhn shows, "Because it demands large-scale paradigm destruction and major shifts in the problems and techniques of normal science, the emergence of new theories is generally preceded by a period of pronounced professional insecurity"(69). A quick survey of industrial and academic literature shows no instability

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[10] Vallee writes that until Lazar appeared on the scene, Lazar was part-owner of a legal bordello in Nevada. (ref: Revelations).

or concerns along the lines proffered by Bob Lazar in his presentations.

Of some significance here is that the several discourses are feeding each other afresh as spokesmen, like Bob Lazar, appeal to diverse audiences causing mutually compatible justifications for their subaltern agendas.

Fourth Example: Discourse of Occultic

> In the absence of a paradigm or some candidate for a paradigm, all of the facts that could possibly pertain to the development of a given science are likely to seem equally relevant
> —Thomas Kuhn, Structure of Scientific Revolutions

Ruth Norman is used here as the sample of the occultic-literary trajectory of Nikola Tesla. She was, otherwise, a typical grandmotherly suburban housewife in San Diego during the 1950s, '60s, and early '70s. She was also co-founder, along with her husband, Ernest, of the Unarian Brotherhood, sometime shortly after the Second World War. Also called the Unarius, the believers translate the meaning to be "The Science of Life." It is difficult for me to provide a scholarly analysis of Unarian literature as it is usually ludicrous. It consists mostly of nonsequiturs, illogic ramblings, and emotives; and worse yet, (insofar as my reaction to their apparent literary production value), the Unarians are entirely serious in their endeavor to create a body of literature meaningful to a certain cultural production. Yet, what Tesla, if even inadvertently, contributed to this literary production must be examined to discern the shape and context of this consequent cultural trajectory of Tesla's. The exercise is meaningful in creating a broadly balanced academic view of Tesla and his legacy (Norman et al.).

"Channeling," "past lives regression," "earth vortices," and so on, have become a significant multibillion dollar cultural and literary production. It is vectored from people such as Ruth Norman; the progenitors of this cultural production in the modern world are using Tesla as source authority for their "scientific" validity. Of great significance in this production is that Tesla himself never undertook to counter the already-significant occultic literature laying claim to his theories and authority as early as 1900, at the height of his productive career. There are two explanations commonly held as to why Tesla did not aggressively protect his reputation in this area. First, he was philosophically in agreement with the grosser features of much of that metadiscourse. Second, he saw this literature as marginal and did not believe it to have a negative impact on his reputation within the normal science and financial communities.

Over at least a twenty-year period, Ruth Norman and other Unarians "channeled" Nikola Tesla and other historical

figures of note to discover the hidden secrets of life. (Instead of communicating with the dead through a séance, the medium becomes the "voice" of the called spirit, allowing that spirit temporary "full use" of the medium's mind and body.) Their extensive transcripts were published in over twenty volumes called the "Tesla Speaks" series. Supposedly, Tesla provided Norman with the secrets of the universe from the "spiritual plane." Consider several examples from the eighth volume of that series, from 1975. From a channeling on September 26, 1973, Nikola Tesla supposedly speaks through Ruth Norman:

> [RUTH]. Nikola, you related the other day that the lens was very rapidly growing. If this is still being expanded, I'd love to hear of it.
> NIKOLA. We mean that the original lens has grown to its fullest dimension, and now there are other lenses. You can liken it to layers of an onion and that this lens has filled one layer and there are other lenses now being established through harmonics in other layers.
> [RUTH]. Oh, how magnificent.
> NIKOLA. Yes, and it will continue on throughout Infinity. Yes, it is beyond us!
> [RUTH]. Oh, what a concept. . . .
> NIKOLA. But I watch you daily, and see your wise interpretations and your constant readiness to give in all ways, to the conscious mind. I am aware of the great Light that surrounds the consciousness of yourself and I am sometimes amused at the people's reaction to you. They do not understand, and sometimes are fearful, or are taken up by your projection (87-88). [Note: The "other lenses" may be other mediums or channelers?—T.K.]

Much more readable is Norman's assessment of the life and career of Tesla:

> He was, as Nikola, in all respects a super-human Being for the innovations that he brought to man completely revolutionized the earth, and as yet are to be interpreted by the scientific domain for the future growth of technology. Even today, humanity awaits the great Being's inventions to be realized, which would give untold comfort to the physical plane of existence. During this last earth life, he has paved the way for interplanetary communication with his Tesla Tower [Wardenclyffe], and has secured for mankind a whole new frontier of scientific understanding . . . done with the never-ending assistance of his Biune, Uriel, and the Unarius Brotherhood (36).

CONSOLIDATING THE CASE

The alleged conversation that Ruth Norman has with Tesla turns out, by my survey, to be quite typical of a number of producers of this genre—especially with respect to Tesla. While at first, the appeal was a mystery to me, I could not dismiss the considerable size and popularity of the genre. A survey of this literature by Jacques Vallee solved the mystery of this appeal satisfactorily to my mind. Vallee in *Messengers of Deception* shows that

> The social, historical, and political consequences of the spreading belief in the contact with space are here, and they are real, no matter how ludicrous and bizarre they may appear. In fact, the more ludicrous and bizarre they appear, the more effective they are as subliminal seduction and as other forms of psychological control, and subliminal seduction is exactly what we are dealing with here (53).
>
> * * *
>
> Great social changes often come from the least expected area. I believe that the most powerful factor that can change a society's structures is not a simple terrestrial "enemy" beyond its borders. This change can come from within, if the gap between the scientific elite and the frustrated public gets wider and is deliberately exploited. The instruments of this profound change are the contactees, the believers in celestial interventions of all kinds, the scouts of cosmic armies (66).

Profoundly insightful, Vallee describes boundaries about the occult literature that uses Tesla, yielding assessments of both the range of opportunity of this genre, and showing the necessary rhetorical constructions required for a successful appeal to a particular audience. What is it about the theories and writings of Tesla that seem to contribute to a legacy that is growing much larger with each passing decade? Turning to the framework of Communications Theory, Postman says, "the clearest way to see through a culture is to attend to its tools for conversation (*Technopoly* 8).

Technology Creates the Socio-Climate

Samuel F. B. Morse (telegraph), Alexander Graham Bell (telephone), Thomas Alva Edison (movie film industry), and Nikola Tesla (radio, television) have entirely replaced the metalanguage and metasymbology of the modern world from its nineteenth-century forms. Whereas, Morse, Bell, and Edison have created neutral information technologies, Tesla created an information technology coercing certain philosophical constructions from the inception. Examine what Postman says about the origin of modern information technology:

> The telegraph made a three-pronged attack on typography's definition of discourse, introducing on a large scale irrelevance, impotence, and incoherence. These demons of discourse were aroused by the fact that telegraphy gave a form of legitimacy to the idea of context-free information; that is, to the idea that the value of information need not be tied to any function it might serve in social and political decision-making and action, but may attach merely to its novelty, interest, and curiosity. The telegraph made information into a commodity, a "thing" that could be bought and sold irrespective of its uses or meaning (*Technopoly* 65).

As such, both the telegraph and the telephone are neutral mediums. We do not "attack" either Morse, Bell, or Edison over the content of information moving within the mediums. Yet, although the mediums are neutral, the systems proposed by Tesla were infused with a philosophy that to a large extent was rejected by others. However, in rejecting Tesla's greater philosophy, the mediums were not left neutral—Tesla's philosophy was replaced with another philosophy. As this century comes to a close, the philosophical basis of Tesla and the electronic mediums he created from it are coming together again. This effective reemergence of Tesla philosophy and technological mediums are best seen in the four cultural productions surveyed in the above analysis. Again, as shown in Figure 1, seven trajectories develop from the legacy of Tesla; the four detailed here are, to my mind, the potentially the most significant during the next half century. This closure, if it happens, will be taking place long after the worst consequences of electronic media have been manifested.

As Tesla recovered from the loss of the Wardenclyffe facility, he prophetically described the coming state of affairs relative to the way the electronic media affects humanity. He always rejected the usurpation of his designs by others, they who did not have the philosophical sensitivity to benefit the human condition with the technology (reference Tesla's quote on page 42.) Tesla, I am sure, would have been in total agreement with Neil Postman's assessment of the modern situation with the electronic media:

> We have reached a critical mass, I believe, a critical mass in that electronic media have decisively and irreversibly changed the character of our symbolic environment. We are now a culture whose information, ideas and epistemology are give form by television, not by the printed word. . . . They delude themselves who believe that television and print coexist, for coexistence implies parity. There is no parity here. Print is now merely a residual epistemology, . . .(*Technopoly* 28).

It is my contention that the discourses just analyzed are growing in large part as a result of the epistemological shifts from the print media to the electronic media. This leaves the print media devoid of much of the structurally traditional rhetoric, as it is used by people framing their logic and rhetoric from their electronic media epistemology. This encourages many of the departures examined in this analysis. As Postman writes, "I hope to persuade you that the decline of a print-based epistemology and the accompanying rise of a television-based epistemology has had grave consequences for public life, that we are getting sillier by the minute" (*Amusing Ourselves* 24).

Additionally, Kuhn shows how this metadiscourse in alternative science satisfies two criteria that give this structure continuing growth: (1) "Their achievement was sufficiently unprecedented to attract an enduring group of adherents away from competing modes of scientific activity." (2) "Simultaneously, it was sufficiently open-ended to leave all sorts of problems for the redefined group of practitioners to resolve" (10). Therefore, these epistemological shifts affirm the notions that Toffler, Postman, Davidson, and others, have theorized concerning techno-sociological cycles.

I am not prejudging the value of Vedic philosophy in effecting a course in the future of technology, or prejudging the possible value of technologies now assigned the status of pseudo-sciences. Yet, I am both fascinated by, and concerned about, the producers of some of the literature surveyed in this treatise. This emerging culture is circulating about various features of Tesla's writings and legacy. Clearly, the conclusions of Vallee, Davidson, and Postman show a growing trend toward sociological consequences that are detrimental to the health of modern society. For example, Davidson writes, "Historically, whenever the real power of any group increases, ideologies arise to justify that new power. As the example of the cargo cults shows, ideologies may be remote from the facts and still be believed" (*Great Reckoning* 282). To the extent that Tesla resonates in these cultural productions, I am preparing myself to be an academically balanced Tesla apologist.

As an apologist, the framework I use to assess the dynamics of these ideas and inventions is that of Robert Pirsig's "Metaphysics of Quality." That is to say, I recognize in Pirsig's notion of Static Quality the structure of the normal science community and all existing mass-technology. Into Pirsig's notion of Dynamic Quality, I place the whole field of speculative technology, unrealized technologies, and innovative and creative ideas. This examination of the several discourses has been operative in this area of Dynamic Quality. Yet, that which is new, innovative, and a contribution to Static Quality must be first generated in the realm of Dynamic Quality (Pirsig 427ff). As Kuhn says, "What were ducks in the scientist's

world before the revolution are rabbits afterwards. . . . Therefore, at times of revolution, when the normal-scientific tradition changes, the scientist's perception of his environment must be reeducated—in some familiar situations he must learn to see a new gestalt" (111-112).

Finally, in the survey of all that Tesla accomplished, wrote, and spoke of, he reveals his philosophical imperative: to improve the human condition through a balanced scientific-technological approach, always in harmony with nature. Tesla foresaw the modern situation (in a contrarian sense) and attempted to correct the prevailing course of the engineering-applied sciences long before men such as Postman, Burke, and Wilson seriously flagged attention to many unstable trends in modern technology. This attempt to change, of course, was ultimately felt within the trajectories of Tesla's legacy.

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(Adapted from Richard Quick; INTERNET: <richard.quick@SLUG.ORG>, Dec. 20, 1995)

Barnes & Nobel Booksellers, 126 Fifth Ave., New York, NY 10011
Tesla titles. video tape: NIKOLA TESLA: THE GENIUS WHO LIT THE WORLD, that takes the viewer inside the Tesla museum in Belgrad, Yugoslavia before the war.

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Produced "Nikola Tesla: The Genius Who Lit the World" video above.

Twenty First Century Books, Box 2001, Breckenridge, CO 80424
Tesla book catalog, titles include the first edition of Tesla's "New York Lecture, April 6 1897."

United States Patent Office, Washington, D.C.
Copies of Tesla's patents are available for $1.50 each. Specify patent numbers.

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BBS: 214-324-3501; Tesla software, Tesla papers and Tesla info; public domain information accepted and available.

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