

Chapter 9

The Fifth Joint Point

*The singularity is near.
Kurzweil (2005)*

What kinds of creatures are we? Why do we do what we do? Where are we headed? What should we be doing? These are the questions that humans have struggled with since the capacity to ask them first emerged. And with such questions came the first collective systems of justification that ultimately separated the human world from the rest of the universe. Following Matter, Life, and Mind, Culture became the fourth great emergence.

With the outline of the unified theory now in place, we can return to these timeless questions and reflect on them anew. Humans, the unified theory tells us, are the justifying animal. Our singularly unique accomplishment was not tools, opposable thumbs, or the ability to walk, but instead our ability to construct systems of justification that coordinate human groups and provide narratives for how the world works and our place in it. I want to suggest here that our future destiny is tied to the kind of justification systems we build. It is in that light I submit that our transcendental purpose is the construction of a new global system of justification that effectively merges wisdom with science and technology in a way that fosters the emergence of a new global age.

Return for a moment to the picture of cosmic evolution depicted by the ToK System. A pattern is apparent. Matter emerges out of Energy, Life emerges out of Matter, Mind emerges out of Life, and Culture emerges out of Mind. The natural question that follows is, what emerges out of Culture? A sensible answer is MetaCulture, and the unified theory suggests that the way there is through the construction of the fifth joint point.

But what would such a joint point look like? Joint points are the links between the dimensions, so we should consider the nature of other dimensions of complexity and what gave rise to their emergence. Each dimension that has evolved following Matter's emergence from Energy at the Big Bang has been associated with the evolution of a novel information processing system. The dimension of Life emerged via genetic information processing, Mind via neuronal information processing, and Culture via symbolic information processing. It is thus reasonable to suggest that

the dimension of complexity that follows Culture will arise in the context of a new system of information processing.

Just as this formulation suggests, Kurzweil (2005) argued we are at the cusp of a phase transition and new human epoch because of the Information Age and the associated emergence of electronic computational technologies and the Internet (i.e., a connected, novel information processing system). Kurzweil defined epochs in very much the same way that I view dimensions of complexity. His first three epochs correspond directly to Matter, Life, and Mind, and consist of information in material objects, living objects, and brains. His fourth epoch, technology, roughly corresponds to Culture on the ToK System. His book is about the emergence of the fifth epoch, which he believes will be achieved by the merger of human technology with human intelligence and human biology.

The unified theory corresponds well with Kurzweil's vision in the sense that both systems clearly point to the possibility of a new phase transition associated with the emergence of new information processing systems. But the unified theory further suggests that novel information processing capacities are not enough. In addition to new computational systems, we need a way to assimilate and integrate human knowledge into a global system of understanding. Indeed, many have argued that one of humanity's greatest threats is the possibility that we will create technologies that far outstretch our wisdom to control them. To counteract this problem, great technologies must be fused with a deeper understanding of human nature. Yet what science has produced so far is the capacity to understand and control the physical and biological worlds. Progress has been far slower on the profound questions regarding the nature of human nature, consciousness, morality, and so forth. By bridging the natural sciences, the social sciences, and the humanities, the unified theory attempts to change the status quo. If it could be successful and effectively combined with great technological innovations, the theorized consequence would be the fifth joint point and the emergence of a MetaCultural dimension of reality. In this final chapter, I explain how the unified theory offers a scientific humanistic worldview, clarify its relation to some of the major existing worldviews, and articulate an ultimate justification that can serve as a guide in constructing the fifth joint point in a manner that ensures the betterment of the human species and the world we live in.

The Unified Theory As a New Scientific Humanistic Worldview

The academy has failed to offer a coherent picture of the relationship between science and human values. By far the most well-known insight regarding this relationship is that one cannot justifiably derive moral oughts from what is scientifically true. It is a profound insight with many important implications. But does it mean that science is fully separate from human values? No. That is not a conclusion that logically follows from the Humean separation of is and ought. The unified theory posits that all human knowledge systems are systems of justification and even if, as

a body, science attempts to factor out human values, scientific justification systems inevitably interact with policies, laws, religious narratives, and other components of the social fabric and thus must be developed with this in mind. In this section, I build the case that the unified theory carves a pathway toward the construction of a scientific humanistic worldview that can weave together the empirical truths uncovered by the scientific method, the authentic human passions artfully expressed by the humanities, and the diversity of large-scale justification systems embodied by cultures around the world into a global justification narrative.

The Science Wars

An interesting debate between modernists and postmodernists emerged in the 1990s. Called the science wars, the debate highlighted the fact that—as has been popularized at least since C. P. Snow’s (1998) famous characterization of the two cultures of the sciences and the humanities in 1959—the academy has failed to produce a consensually agreed-upon vision of the human condition and nature of knowledge. The first clear shot in the science wars came from Paul Gross and Norman Levitt (1994) in their book *Higher Superstition: The Academic Left and Its Quarrels with Science*, in which they argued that the postmodern project is muddleheaded and politically dangerous. The debate rose to a fevered pitch in 1996 with the publication of a special issue of the journal *Social Text* devoted to the science wars and developed largely in response to Gross and Levitt’s (1994) critique.

In that special issue there was an article by the mathematical physicist Alan Sokal (1996a) who, in his paper, “Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity,” offered a postmodern interpretation of some of the fundamental issues in physics, especially concerning the unification of quantum mechanics and general relativity. Although the paper was accepted as presenting a genuine argument, shortly after the article was published, Sokal (1996b) announced it was a parody written to send a shot across the bow of postmodern scholarship. He had written the paper as a “mélange of truths, half-truths, quarter truths, falsehoods, non sequiturs, and syntactically correct sentences that have no meaning whatsoever” (Sokal, 2008, p. 93) to demonstrate that much postmodern scholarship was intellectually vacuous. Sokal articulated his justification for the hoax in a subsequent publication a few weeks later.

One of my goals is to make a small contribution toward a dialogue on the left between humanists and natural scientists—“two cultures” that contrary to some optimistic pronouncements (mostly by the former group) are probably farther apart in mentality than at any time in the past fifty years . . . My concern is explicitly political: to combat a currently fashionable postmodernist/poststructuralist/social-constructivist discourse—and more generally a penchant for subjectivism—which is, I believe, inimical to the values and future of the left. (Sokal, 2008, p. 93)

The hoax was covered by *The New York Times*, and it became a legendary academic controversy. On one side were the hardnosed scientists committed to the notion that science in general and physics in particular could reveal or at least approximate

timeless objective truths about the universe and our place in it. On the other side was a certain sect of sociologists, historians, philosophers of science, and other post-modern intellectuals who were studying science as a social construction and were arguing or implying that science should not be granted the status of final arbiter of ultimate truth. Conferences, articles, and books followed, with some attempting to clarify the arguments and misunderstandings of both sides (LaBringer & Collins, 2001) and others offering sophisticated arguments for rapprochement and moving beyond the science wars (e.g., Hacking, 1999).

The science wars nevertheless remain a clear symptom of the fragmented pluralism in the academy. To understand why the science wars erupted, we need to place them in the proper socio-historical context. Since the earliest attempts to formally characterize the nature of human knowledge, there has been a tension between a focus on what truly exists (i.e., questions of ontology) and how we come to know about it (i.e., questions of epistemology). The relationship between ontology and epistemology can be seen in how most modern philosophers conceptualize the nature of knowledge. Most current theories of knowledge hold that knowledge is justified true belief, and knowledge is generally considered by philosophers as consisting of three things: (1) the belief the individual has (which relates strongly to epistemology); (2) the truth (which relates strongly to ontology); and (3) the degree of justification for the belief (which relates to their relation). Questions and propositions about the nature and kind of justification required for a belief to be true constitute an entire branch of philosophy known as epistemic justification. It is important to note, however, that when philosophers speak of justification, they generally have in mind the analytic dimension as opposed to the social or pragmatic dimension of justification. For example, in opening his book on epistemic justification Swinburne (2001) explicitly noted that he was not concerned with justification in terms of social or pragmatic values, such as believing that one's spouse is faithful—even though the evidence suggests otherwise—because it is easier to be happy or keep the family together. Instead, he was concerned with what justifies a belief as true in the analytic sense of the word.

The relationship between epistemology and ontology has always been complicated, and philosophers and intellectuals have historically ranged anywhere from extreme objectivism (we see or can discover the world as it truly is) to extreme subjectivism (the only thing that really exists is our subjective experience of the world) with many variations and combinations therein. In the 1930s and 1940s, with the rise of logical positivism and the power of modern science in full view, the pendulum had swung toward a strong objectivism. But the foundations of the logical positivists were cracked by several philosophers, perhaps most notably Karl Popper. The pendulum swung further toward emphasizing the social process of how knowledge was constructed with Thomas Kuhn's (1996) famous book, *The Structure of Scientific Revolutions*, which argued that science consisted of paradigms that are in many ways socially constructed and rise to power, work to maintain control, and then are overthrown with the emergence of new data and arguments. Paul Feyerabend, Michael Foucault, Jacques Derrida, and others piled on, questioning the notion of objective knowledge and making various arguments as to why science was a social

institution that constructed knowledge as a consequence of political pressures and the intersubjective agreement of its practitioners. That this view was gaining significant traction in some intellectual quarters (especially the social sciences and humanities) spurred the defenders of science (i.e., Gross, Levitt, Sokal) to act and try to move the pendulum back away from the pernicious “pendant for subjectivism” that they saw in postmodern perspectives.

So how are we to make sense of the questions posed by the science wars from the vantage point offered by the unified theory? First by viewing human knowledge—including science—as systems of justification, we can better understand the central claims of both sides of the debate and eliminate the extreme straw men characterizations (i.e., science is the Truth versus science is an arbitrary social construction). Second, we can see the rise of postmodernism as a symptom that something is wrong with a purely natural scientific worldview and conclude that natural science alone is not up to the task of guiding humanity with purpose. The solution from postmodernists is to adopt a position of multiple epistemologies and to challenge any claims to universal truth applied to humans. In contrast to this solution, the unified theory offers a foundational scientific humanistic worldview, one that can deal effectively with *the problem of value* (see Quackenbush, 2008).

Science As a Kind of Justification System

It is clear when reading both sides of the science wars that the term science can mean many different things. It can refer to a collection of empirical facts and findings, a societal institution, a methodology, or a worldview, not to mention the various kinds of scientific disciplines that fall into grey areas (e.g., Is anthropology a science?). Because of its multitude of various meanings, questions about the degree to which “science” is a social construction or is value-laden are confounded. The unified theory characterizes science as a kind of justification system that can then be considered as a set of specific facts and claims, a system from which to view the world, an institution, a collection of methods, and various domains of inquiry corresponding to different dimensions of complexity. It is my strong sense that much clarity would have been achieved in the debates by understanding science along these lines. For starters, when we think about science as a system of justification, it becomes akin to other systems of human knowledge, like law or religion, in that it is a human construction that emerges in a particular socio-historical time and place. Although those in the science studies typically do not characterize science explicitly as a kind of justification system, they do look at it as a social process similar to other socially constructed systems and consider how the institution of science is intertwined with human values and cultural and political forces (i.e., what gets funded, what ideas are attacked or embraced by the culture at large, what topics are taboo to research, how moral forces shape the kinds of research done, etc.).

But when framed this way there is little to object to from the vantage point of the hardnosed scientist, as even the most ardent defenders of science recognize it as a “human endeavor, and like any other human endeavor it merits being

subjected to rigorous social analysis” (Sokal, 2008, p. 117), including analyses of which problems are counted as important, who gets prestige and power, and even what types of theories can be conceived and entertained by the human mind. What the defenders of science object to is the notion that science is *just* a social justification system, with the implication being that the theories are arbitrary and carry no more truth validity than other human narratives. As Sokal put it, he does not aspire “to be the Emily Post¹ of quantum field theory” (2008, p. 94), meaning that while manners and social conventions are *just* social constructions, physics produces equations that map onto a reality that exists independently of human desires, politics, or other social pressures. This is, of course, a justifiable argument. Anyone who argues that the mass of an electron was determined in the same way people decided the fork should go on the left side of the plate has not the faintest idea about how justifications in the physical sciences are built.

And yet virtually no one in the science studies or postmodernist camps argues that specific facts discovered by science are *arbitrarily* constructed. And it is rarely the specific scientific findings such as the mass of an electron that the postmodernists take issue with. Instead it is the institution of science, the nature of scientific debate, and the scientific worldview coupled with its causes and consequences in society that many postmodernists want to emphasize and examine from a more relativistic lens. Understanding science as a justification system allows us to consider it both as collection of specific findings (which can be characterized as descriptive or explanatory statements justified by scientific methodology), *and* how it becomes a worldview when we consider it a system of interlocking justifications. But when considered as a worldview, science can then be characterized more along the lines of a value-laden normative vision about how people ought to view the world and their place in it. This shifting in meaning creates complications because as soon as we move from the realm of specific empirical facts uncovered by the scientific method to considering science as a worldview, the object under consideration has changed. The argument that the scientific worldview is a human construction that has normative elements and cannot necessarily be judged to be superior to others becomes a potentially reasonable position to defend, whether one is a postmodernist or not. Later, I will make the argument that the natural scientific worldview per se is both incomplete and problematic, although postmodern relativism is not the solution.

Let us go back for a moment to my brief summary of some of the work done in epistemic justification and consider the fact that philosophers in epistemology focus primarily on the analytic—as opposed to the social or pragmatic—meaning of the term justification. One of the reasons I became fascinated with the term justification is that it carries both social and analytic connotations. For example, when some people hear the term “justify,” they think it is equivalent to rationalizing. And yet others see it as a good description of the central problem in analytic philosophy. Still others (mostly philosophers) wrestle with the relationship between the social (or moral or subjective) and the analytic connotations of the term. This ambiguity

¹Emily Post was famous for her writings about etiquette and manners in the early 1900s.

about the nature of justification, combined with the lack of clarity regarding the nature of science seems to have played a big role in the debate.

From the vantage point offered here, if all the combatants in the science war debate had clear notions of science as a kind of human justification system that comprised of both analytic and social components, clarity about the precise nature of the disagreements would have been achieved much more quickly. What likely would have emerged is a fundamental disagreement about the value and comprehensiveness of a scientific worldview and its authority in human discourse to justify human action. Framed this way, the postmodernists question the wisdom to grant authority to *any* single worldview and criticize the scientific worldview as obviously incomplete and wanting in some areas. They also see it as ineluctably enmeshed with Western civilization and values, and are concerned with imposing such culturally relative perspectives on others. In contrast, the scientists see science as revealing universal analytic truths (e.g., the Periodic Table) that must be incorporated into any worldview claiming truth value (which all worldviews do). They also argue that the scientific method and the results it yields should be granted general political authority as they are far more reliable than authority based on social power, revelation, or tradition. Moreover, in response to the multiple, local epistemologies position taken by postmodernists, many scientists raise the criticism that if all knowledge systems are equally valid, how are we to justify the prevention of a Big Brother government like that depicted in George Orwell's *1984*, which could easily be characterized as postmodernism gone mad? Along these lines, Cromer (1997) argued that Hitler used justifications for controlling science that had a "chilling" resemblance to postmodern frames.

Each side of the debate has some merit, although the vision I am offering is ultimately more in line with modernist conceptions than postmodern ones because of its foundationalism. Nevertheless, the purely natural scientific worldview adopted by many is incomplete because it fails to effectively characterize the problem of values, a point I will return to below. On the other hand, it seems that much of postmodernism's fuel, like that of creation science, is found in the criticism of scientific authority. With its anti-foundationalism and periodic implication that all knowledge systems are power-based, local, and equally valid, postmodernism fails to generate cumulative knowledge, sets a dangerous stage for intellectual sophistry, and carries the seeds of its own implosion. What is needed is a new vision of human knowledge that effectively characterizes the relationship between science and humanistic values and points the way toward a higher purpose.

The Elements of Justification Systems

This discussion leads fruitfully to the question of what are the fundamental elements that make up human justification systems. We have already implied two broad domains, one that is scientific and concerned with analytic truth and the other that is humanistic and is concerned with human values and prescriptions about what ought to be. I have found it fruitful to divide these two broad domains further, each

into three separate elements, and I briefly lay out here the six foundational elements that appear to underlie all justification systems. What I mean by this is that when analyzing a particular justification, it can be considered from at least the six angles I articulate here. The six components are as follows: the semantic, the analytic, the evidentiary, the subjective, the social, and the moral.

1. *The Semantic Element* refers to the language or symbolic–syntactical aspect of justification, including the conceptual meaning of words, symbols, and signs, and the relationship between the signifier and what is being signified. Composed in English, we can wonder how the meaning of this book would be altered if it were translated into Chinese, Swahili, or French. Language is a fundamental component because it provides the thread from which the tapestries of justification systems are woven, although in contrast to what was argued by the more extreme versions of the now discredited Sapir-Worf hypothesis, language is not all there is to knowledge. Linguistics, the philosophy of language, and semiotics are all domains of study that focus on the semantic component of justification systems.
2. *The Analytic Element* refers to the logical coherence and internal consistency of a justification system. Logical coherence is often considered as a necessary feature of truthful systems, and there is a strong human tendency to seek narratives that have an internal logic. And when confronted with a justification system, one of the first things people will tend to do is to analyze its logical consistency. Mathematics represents the purest form of analytic justification and analytic philosophers explore the development of systems based on pure logic.
3. *The Evidentiary Element* refers to how the justification system incorporates and is shaped by external evidence. As a justification system, science is considered to be fundamentally defined by its emphasis on the collection of objective evidence. Indeed, in its origin myth, science’s break with philosophy occurred when investigators got up out of their armchairs and started to collect evidence for their conjectures. The evidentiary component lines up with the correspondence theory of truth and refers to the degree to which the system corresponds to the outside world. Of course, in everyday interactions, whether involving legal proceedings where judges and juries examine the degree to which claims by prosecutors and defendants correspond to the evidence collected, or parents determining the veracity of their child’s account of apparent misbehavior, the evidentiary element is commonplace in human justification processes.
4. *The Subjective Element* refers to the particular perspective, biases, preferences, and interests of each individual and how these influence personal justification systems. Put in the frame of the unified theory, the subjective element refers to the interaction of the justification system and the experiential system. To get a flavor for the importance of the subjective component in understanding justification systems, consider the enormous variation in responses that occur as individuals are exposed to ideas. Or consider the relationship between certain specific life experiences and the larger justification narratives people espouse or gravitate to.

Demorest (2005), for example, articulates why the personal histories of Freud, Skinner, and Rogers influenced the theories they proposed.

5. *The Social Element* refers to the large-scale collective justification systems guiding the group, especially social narratives, laws, conventions, and policies that state what is appropriate and acceptable and what is not. Religious beliefs, political stances, legal systems, nationalistic identities, and gender roles all fall under the social component of justification systems, which are analyzed by sociologists, anthropologists, and political scientists. In both subjective and social elements, the interests and investments of the individual or group are crucial in understanding the nature and form and content of the justification system.
6. *The Moral Element* refers to ideas about the way the world ought to be. Whether this simply represents a subset of subjective and social justification or is its own separable dimension is a point of debate, but data are emerging supporting the idea of an innate moral sense or at least an innate sense of fairness and capacity to be sympathetic and altruistic. And other research has demonstrated that young children can separate social convention from moral arguments. I have come to see the value of ultimately grounding the other components in a moral dimension, a point I will make at the end of this chapter.

The argument I am making here is that every justification has at least these elements and can be examined from the vantage point of each angle. To get a clearer sense of how we might apply this taxonomy, consider the following justification: *The earth goes around the sun*. We can start with the semantic element, noting that the statement is in English, and move from that to clarifying what the various words in the statement signify. Second, there is the logical coherence of the statement, which is usually referenced in relationship to other statements with which it is networked (Dewitt, 2004). For example, if it were claimed that the earth went around the sun, and the moon went around the earth but the sun went around the moon, the logical coherence of the justification system would be faulty. Then there is the evidentiary component. What evidence is invoked to support the claim? The mapping of the planets and the capacity of astronomers to place satellites in the solar system with predictive consequences would be some of the evidence to support this claim.

The subjective component angles us to look at who is making the claim, and why at this moment is the individual doing so. In this light, we want to consider the statement as a behavioral investment, anchored in an individual's experience. So in this context we might ask what current experience has activated this justification, what motives are associated with it, and how long has the individual held the claim. (Consider that I am making the claim right now to justify the elemental analysis of justification systems.) The social context asks how the statement fits into the context of justification at the various levels of social analysis. Of course, this statement is a part of the generally accepted worldview. Consequently, a greater emphasis would be placed on the subjective if the individual claimed that the sun went around the earth. Finally, the moral component asks the extent to which the statement has moral value or might have moral implications. Of course, although in today's world the statement does not carry moral implications, it did in the context of Galileo's world.

I have found this taxonomy of the elements that make up justification systems useful on several accounts. First, it provides me a way to systematically analyze the various components that go into justifications. Second, it has been helpful in allowing me to see why we have certain broad domains of academic disciplines and how they are related. For example, it allows me to see why the semioticians were so hopeful that their line of inquiry might be foundational because the formulation suggests that indeed language is foundational to justification systems. In a similar vein, it helps me to consider the difference between mathematics and science, whereas the former focuses on the logical relationship between symbols and the latter focuses also on gathering evidence.

Another perhaps more important way this taxonomy has been helpful has been the way it allows one to more clearly see the difference and distinction between the scientific and humanistic components of justification systems. The first three components make up the scientific epistemic triangle (cf. Machado, Lourenco, & Silva, 2000), meaning that purely scientific justification systems strive to factor out the subjective, social, and moral elements and develop frameworks of understanding that consist of semantically represented concepts that are logically coherent and are mapped onto external “reality” via the evidence gathering tools that make up the scientific method. Objective definitions, quantification, experimental controls, predictions, independent replications, etc., are all designed to minimize or reduce the influence of subjective, social, and moral elements.

With this point in mind, let us consider how science has impacted human justification systems at large. One of the most significant consequences of the Enlightenment and the modern scientific revolution has been the displacement of pre-modern mythologies. In many regards this displacement can be viewed as positive. Historically, many such mythologies were grounded in intuition, revelation, tradition, and authority, rather than logic and evidence. Consequently, such worldviews can now be seen in light of modern scientific knowledge as naïve, implausible, and in many cases plainly inaccurate. Thus, those following science can take solace in its insights and scoff at the immaturity of those ideas of yesteryear.

And yet, although science has undeniably provided us more and more accurate models of the universe, it has also come with a significant price. Schwartz (1986) detailed the battle for human nature that took place as the rise of science occurred, and he examined the fallout at the levels of values, meaning, and purpose. He detailed how, just over a century ago, the higher educational system in America taught moral philosophy, and in so doing it attempted to create a community of common values and shared aspirations. Following the growth of science and its (in)famous insistence on the separation of ought from is, higher education became a place where people learned about how the world was, but were no longer taught how they ought to be. Schwartz argued that the result has been the loss of moral direction. To see why a scientific worldview might have this effect consider that a text titled, *The Scientists*, opened with the line, “The most important thing that science has taught us about our place in the universe is that we are not special!” (Gribbin, 2002, p. xvii).

Instead of a moral compass, Schwartz (1986) argued that people have been given enormous freedom to construct their own lives and make their own decisions. Although this outcome clearly has had many positive elements, it also has resulted in large numbers of people, at least in America, who are fundamentally unsure when it comes to their philosophy of life. “They don’t seem to know where they belong. They don’t seem to know that they are doing the right things with their lives. They don’t seem to know what the right things are” (Schwartz, 1986, p. 19). If we put this in the context of the above analysis regarding the components that go into justification systems, we see that the scientific worldview is incomplete. What is needed is a way to blend scientific justifications and their emphasis on semantic precision, logical coherence, and evidence with subjective, social, and moral elements into a comprehensive system of justification that can place both sides of the scientific humanistic dialectic into a coherent whole. This is what the unified theory attempts to accomplish.

Valuing the Scientific and the Humanistic Components of Justification Systems

In a fascinating text, *The Quest for a Unified Theory of Information*, Haefner (1999) makes the point that most comprehensive theories of information now recognize the need for a formulation that includes both an information processor and the data being processed. Said differently, information can only be understood as the interaction or product of the data and the processor. This formulation resonates with my views regarding the nature of knowledge. Specifically, Haefner’s insight suggests that Human Knowledge must be thought of as the product of the Human Knower (processor) and the Human Known (data being processed). This formulation lends itself usefully to the construction of a philosophy that is both scientific and humanistic (Henriques, 2005, 2008) because the two components, the scientific and the humanistic, reflect two different valuations of the human knower.

In attempting to construct general laws that objectively describe complexity and change, the scientist works to de-value the influence of the specific human knower in the knower-known interaction. In other words, the task of the basic scientist is to describe “reality” in as knower-independent (AKA objective) terms as possible by factoring out subjective, social, and moral aspects of justification and leaving behind semantically clear, logically coherent, evidence-based descriptions of observed behavior and its underlying causes. Scientific methodology can be thought of as the tools by which this objective knowledge is acquired. Although it is certainly true that some of the developments in modern physics (i.e., quantum mechanics and general relativity) raised enigmatic questions about the relationship between observation, measurement, and knowledge, these developments did *not* lead to the general conclusion that there is no such thing as objective knowledge. In accordance with the analysis offered by Wilson (1998), I believe that the quest for objective truth (defined here as accurate models of complexity and change) should remain the idealized goal of the institution of science.

But the analysis does not stop there. First, it must be recognized that de-valuing the knower and striving for knower independent knowledge is a value-laden stance, at one level. At the very least, epistemic values (accuracy, truth, honesty, etc.) are required. In addition, the institution of science is seen as emanating out of but also being constrained by social justification processes. At its most general and abstract level, this constraint is found in acknowledging that there is no view from nowhere and that the knowledge acquired by scientists is created and understood by human minds which inevitably construct worldviews based also on subjective, social, and moral components. That science is constrained by such values is more concretely recognized when one considers ethical constraints and Internal Review Boards that (appropriately) prevent particular avenues of investigation from being pursued. As a researcher on suicidal behavior, I could never experimentally investigate the causes of suicidal behavior by randomly assigning patients to a therapist who tells them they are worthless and their situation is hopeless.

Second, we must also recognize the rather obvious point that science is not the only way of knowing. Science is seen as one particular type of justification system, one that is incomplete and that has particular strengths (accuracy) and limitations (amorality). Other justification systems (e.g., religious, legal, political) are explicitly prescriptive with regards to values. This is important because it highlights that science will inevitably interact with other justification systems. This problem is akin to the problem of the double hermeneutic, whereby scientific justification systems about humans feedback on them and influence their very nature (Quackenbush & Henriques, 2008). One does not have to look far to see how this might happen. Consider, for example, the public controversy that surrounds Darwin's theory of evolution to this day.

In the scientific humanistic worldview promoted here, the humanist values the knower and all of her idiosyncratic subjective elements that contribute to the uniqueness of her knower-known interactions. Specifically, in a very Rogerian way, the humanist empathizes with human phenomenology and embraces the subjective, social, and moral elements of justification systems. In the process of valuing the uniqueness of the knower, humanism defines humans as the most valued of subjective objects and, thus, unlike the "cold" formulations of basic science, the humanist side of the equation functions as a prescriptive value system. Yet, the humanist also values scientific knowledge as essential to promoting humanity and is not threatened by the ever-increasing power of scientific explanations. In the end, the scientific and humanistic positions are seen as existing in dialectical tension with one another, and there is the recognition that there is value to be had in both valuing and de-valuing the specific knower.

It is clear that, because of its foundationalism, the unified theory is a different kind of justification system than postmodernists generally envision. But how does it compare with the vision of most scientists? After all, most scientists recognize that science is relatively silent on questions of morality and that those questions surely need addressing. For example, Steven Pinker (1997, p. 55) commented, "Like many philosophers, I believe that science and ethics are two self-contained systems played out among the same entities in the same world, just as poker and bridge are different

games played with the same fifty-two card deck.” Scientists are also humanistic in some senses of the word. For example, although humanist and humanistic are the terms used by many in recent times to denote those in the humanities who are concerned with human betterment and often have a postmodern bent, it is also the case that the term humanism refers to a philosophy that focuses on human betterment through science without recourse to supernatural explanations (as is defined by the American Humanist Association). Indeed, in this regard, many scientists see themselves as humanists and many conservative Christian commentators refer to them as such. Thus, the question arises: are traditional scientists also already humanistic in the way described here?

Although it is my hope and belief that many natural scientists will gravitate toward the vision I am offering here and see it as very compatible with their own, it nevertheless remains the case that the unified theory offers a somewhat different perspective than a purely natural science view offered by some, such as E. O. Wilson. As eloquently articulated by Quackenbush (2005, 2008), with its focus on the problem of justification, the unified theory explicitly raises the problem of value and argues that scholars in the natural sciences, social sciences, and humanities need to make explicit the values that underlie the justification systems that guide their work. In what follows, I attempt to place scientific knowledge in narrative form and articulate an ultimate justification that can serve as a foundational guide for those embracing a scientific humanistic worldview.

The Story of the Universe As Told by the Unified Theory

In response to the problem of what might be termed a meaninglessness that emerges from a purely natural scientific worldview, several authors have made compelling calls for recasting our scientific knowledge in terms of a narrative in a manner that allows humans to see themselves as part of a greater whole. In *The Universe Story*, Swimme and Berry (1994, p. 1) cogently argue this point.

In the modern period, we are without a comprehensive story of the universe. The historians, even when articulating world history, deal not with the whole but just with the human, as if the human were something [completely] separate from or an addendum to the story of the Earth and of the universe. The scientists have arrived at detailed accounts of the cosmos, but have focused exclusively on the physical dimensions and have ignored the human dimension of the universe. In this context we have fractured our educational system into its scientific and humanistic aspects, as though these were somehow independent of each other.

With all our learning and with all our scientific insight, we have not yet attained such a meaningful approach to the universe, and thus we have at the present time a distorted mode of human presence on earth.

I believe that scientific knowledge does have a story to tell about humanity, and it is crucial that we convey such knowledge in the context of a meaningful narrative that explicitly emphasizes a moral component. The ToK System is a picture of the universe story as presently mapped out by scientific inquiry that potentially provides us with a shared origin myth.

In the beginning there was no space or time or matter, only an Energy Singularity that some call God. Then, 13.7 billion years ago, there was the first cause; a chain reaction in the Energy Singularity that resulted in the primordial flaring forth called the Big Bang. During the very first phases of this chain reaction pure energy quanta froze into elementary particles, giving birth to Matter, the first dimension of complexity. Fermions are the fundamental building blocks of matter, and they ultimately interact to form all the matter in the universe. Space and time also emerged from the primordial event. After several hundred thousand years, the incredibly dense, hot universe expanded to the point at which energy and matter decoupled. The electromagnetic behavior that escaped is called cosmic microwave background radiation, and it now provides us a window to view our earliest beginnings.

As the universe continued to expand and cool, matter formed into atomic systems and large collections of gases condensed and formed into stars and galaxies. This variation in energy dispersal created many different types of energy-matter environments, which in turn allowed for the formation of a variety of different types of atoms now represented and categorized by the Periodic Table. The atoms that now make up our bodies were formed in the bellies of stars and then dispersed throughout the universe in magnificent explosions. We are, thus, made from stardust.

Atoms link up through the process of covalent bonding and create increasingly complex chemical systems. One particular environment, found on a planet orbiting an average size star in the Milky Way Galaxy, has been especially conducive to the formation of complex chemical systems. The chemical systems on the surface of planet Earth four billion years ago exhibited a wide variety of complex behaviors. One behavior of a particular class of these complex chemical systems was the behavior of self-replication. Through the process of replication, variation, and selection, these self-replicating chemical systems became increasingly complex and sophisticated and eventually formed into huge strands of ribonucleic acid. Over the next several hundred million years these self-replicating chemical machines transformed into primitive cells, then cells with a nucleus, and finally into large-scale, multi-cellular organisms, similar in complexity to modern day plants. The span of time ranging from 4 billion years ago to 700 million years ago saw the emergence of the second dimension of complexity, Life, which evolved via natural selection operating on genetic combinations across the generations.

Between approximately 640 and 550 million years ago, a new type of multi-cellular creature emerged that moved around in its environment. The capacity for movement resulted in the evolution of a computational control center that measures the animal's relationship to its environment and moves it toward beneficial and away from harmful environments. The nervous system represented a fundamental shift in complexity because behavior of animals is not fully restricted to information processed epigenetically. Instead, mental behavior is mediated by the information instantiated in and processed by the nervous system, and animals learn to generate new behavioral outputs in response to novel environmental stimuli. The period from 640 million years ago to five million years ago saw the evolution of the third dimension of complexity, Mind.

The period from five million years ago through today saw the emergence of the fourth dimension of complexity, Culture, which occurred for one particular animal, the human animal. Bipedalism freed the hands and created more opportunities for behaviors like tool making, which in turn created selection pressures for increased neuro-cognitive capacities and more complicated social interactions. The evolution of human language is generally thought to have occurred between 500,000 and 50,000 years ago. This period is associated with substantial growth of the cortical structures, as well as changes in throat structures associated with language and is also associated with the emergence of our modern ancestors, *Homo sapiens*.

Between 50,000 and 30,000 years ago, there was an explosion of cultural artifacts, such as carved statues, artwork in caves, and burials with ornamentation. Modern humans

began to appear in landscapes all over the world. And the pace of change only accelerated. Agriculture appeared approximately 12,000 years ago, setting the stage for large-scale civilizations. Large-scale systems of belief emerged that coordinated the behaviors of huge populations of people. In more recent times, these justification systems have branched into different domains such as religion, law, mathematics, and philosophy.

Several hundred years ago a new method for constructing justification systems emerged, called science. Built on the value of objective evidence, the scientific method allowed humans to develop increasingly accurate models of complexity and change, and this has given birth to new, previously unimaginable technologies and allowed humans more self-knowledge and more freedom to determine their destiny than any other creature on Earth.

And yet there remains much uncertainty. With technology has come an unprecedented capacity to destroy the planet. Resources are being used up, populations are exploding, and planetary wide changes are occurring in ecologies around the world. And although technology continues to evolve at an astounding pace, it is not clear that humanity's wisdom has likewise increased. Instead, the divisions between nations, religions, ideologies, and ethnicities seem as rigid and fragmented as ever, and it is not hard to envision how serious disruptions in available resources might lead to wide scale devastation, perhaps even the elimination of the human species.

It has generally been the great religious traditions that have put the understanding of humankind in narrative form. Now is the time for the academy to work deliberately toward the construction of a global justification narrative along the lines above. But if we are to create such a global narrative, how will it mesh with other global narratives?

Religion and Creation Science from the Vantage Point of the Unified Theory

The question of how the unified theory relates to the great religious traditions is, of course, an enormously complicated question with the answer depending on the specific religion, the interpretation of the unified theory, and the individual or group doing the interpreting. I am not a religious scholar and thus would be remiss to articulate detailed analyses of major religious tenets and how they mesh with the vision of the universe and the human condition set forth here. Nonetheless, there are some important points to be made.

Let us start with the observation that the unified theory ultimately depicts humans as representing the most recent apex in an accumulating wave of complexity. With this observation, we can ask such questions as these: What has orchestrated this wave of complexity? Is there a guiding hand? Is there an ultimate purpose? Is there a force or entity outside the material universe? The great religious traditions seek answers to these questions. My position is that only an arrogant, scientific attitude would claim that we *know* that nothing has orchestrated the grand scheme. Thus at one level of abstraction, it is obviously a possibility that is not directly contradicted by the unified theory or modern science. Consequently, one is in a position to argue that it is not unreasonable or irrational to have faith in the existence of a higher power

in a way that is a separate magistrate from the domain of science. One can define faith as belief beyond scientific evidence and, as such, faith in a higher power can be grounded in subjective intuition, societal needs, or moral values. Yet, because many problematic things can theoretically be justified via faith, this exemption opens up a potential Pandora's Box. As such, we should not grant faith the power of the state, and we must recognize that faith is ultimately subjective. This notion is currently one of the founding principles of liberal democracies.

The position articulated here is that belief in supernatural entities currently requires a faith component and is legitimized via the subjective, social, or moral elements of justification. To be convincing in a scientific way, those who propound knowledge about God must provide—in a conceptually clear and logically coherent way—evidence for that assertion. And in that regard, such proposals have not fared well, and we do not have good scientific theories of God. It must further be stated that although disproving the existence of God is essentially impossible in principle, imagining circumstances that could prove the existence of a God that defied natural law is not at all difficult. And, indeed, if there were convincing evidence for the existence of God (or gods), then this evidence would have to be incorporated into our scientific models of the world. If, for example, God showed up at a stadium tomorrow for the entire world to see, the naturalistic philosophy that currently guides modern science would no longer be fully tenable. I do not think, however, that this would invalidate all of scientific knowledge. The point here is that, contrary to the opinions of many, I am arguing scientists should not banish a priori any concepts. But they should not accept concepts that cannot be supported with evidence and that fail to fit into the logically coherent connective network of ideas that make up scientific knowledge.

Over the years, I have shared the unified theory with many religious students and colleagues, most of whom are Christian. Although some have struggled with both the specificity and the breadth with which the theory characterizes human nature, it is also the case that virtually all have been able to reconcile their religious vision of humanity with the unified theory. One of the biggest supporters of the unified theory, Leigh Shaffer (Shaffer, 2005, 2008), is an Evangelical Christian. We have had many fruitful conversations articulating how these two systems could potentially live in harmony. Although harmony between the unified theory and devoutly religious perspectives is possible, it nevertheless is the case that there are worldviews that definitively cannot be meshed with the version of reality offered by the unified theory.

The Unified Theory and Creationism

On November 3, 2006, I engaged in a public debate and took the side of what should have been a slam dunk. My task was simply to argue that science had revealed increasingly accurate maps of the universe and our place in it, and that great scientists like Einstein and Darwin made important discoveries that moved us toward

the truth. You might think that this would not be very controversial or disputable. In laying out the case, I explained how, with general relativity, Einstein had up-ended Newton's more commonsensical views of space, time, and matter and how this new formulation has been borne out by almost a century of experimentation such that it now forms one of the bedrocks of modern physics. I also explained how Einstein's formulation had led directly to a startling conclusion that the universe began as an energy singularity (a conclusion derived by a priest no less!), and scientists had used this formulation to literally take a picture of the early universe and date it to 13.7 billion years ago. These findings were so important and powerful that in 2005 two physicists (John Mather and George Smoot) had won the Noble Prize in Physics for their work on this project.

I then laid out Darwin's insights and explained how, in its broad outlines, natural selection was probably the best confirmed scientific theory proffered to date. I further explained that now that biologists could genetically map the tree of life, there was absolutely no doubt that there had been descent with modification from a common ancestor across billions of years. I then shared the evidence demonstrating the existence in the fossil record of so-called missing links between species and then reviewed evidence in geology regarding plate tectonics and various methods for dating deep time.

As a true creation scientist, my opponent believed in both the literal interpretation of the King James Bible and in the general benefits of science. He thus had the enormously difficult task of arguing that the sciences that pointed to an ancient earth and universe (e.g., cosmology, geology, genetics, ecology, etc.) were all fatally flawed. Because he presented himself as a believer in science, he was forced to separate what he believed was "good science" (what he called operations science) from the "bad science" (what he called origins science). After the separation he then argued that while the former group of sciences had many demonstrative truths and had given us many excellent technologies, the latter was driven by misguided philosophies (atheistic humanists) and power-based politics. Finally, he had to argue against all of the empirical data supporting an ancient earth and universe, and that humans represent a branch on the evolutionary tree. Those who have a deep appreciation for science know that such a separation between origins and operations science is specious, to say the least. Moreover, any objective assessment clearly documents that it is not atheism that drives the discovery of an ancient earth, but instead it is a religious fundamentalism that drives the skepticism.

About 120 people showed up, and after the debate was finished, we sent out questionnaires on who the audience thought won the debate. About 70 percent of the respondents said my opponent won the debate! They reported believing that the earth was approximately 6,000 years old, that Adam and Eve were the first people, and that "true" science supported this perspective. Actually, I knew prior to engaging in this debate what the outcome would be in terms of those who would support which side. I had not entered the debate to win it in the traditional sense of convincing the audience of the legitimacy of my point of view. I knew too much about the nature of justification systems, and how people become "entrenched" in particular worldviews such that they are unlikely to alter the foundation of their belief systems

after a half hour talk. Flipping this around, I knew that my opponent was not going to convince me of the legitimacy of his position!

So why did I do it? For several reasons. First, I have long been fascinated with Christian Fundamentalist justification systems that advocate for the literal interpretation of the Bible. When I first learned about it, I was amazed that some people actually “didn’t believe” in evolution and instead believed in the literal truth of the Adam and Eve narrative. I had thought such beliefs would only be slightly more common than believing the earth was flat or that Santa Claus was real. Yet when I looked into it I found to my astonishment that the belief is enormously common. For example, Gallup polls have been tracking this issue since 1982 (<http://www.gallup.com/poll/108226/Republicans-Democrats-Differ-Creationism.aspx>). Specifically, Gallup has surveyed Americans regarding their beliefs about human origins with the following question: *Which comes closest to your views: (1) Humans developed over millions of years, guided by God; (2) Humans developed over millions of years, God had no part, (3) God created humans as is within the last 10,000 years.* The results have been remarkably consistent over time. Between 43 and 47% of Americans endorse the creationist view that God created human beings pretty much in their present form at one time within the last 10,000 years or so, whereas between 35 and 40% endorsed the claim that humans evolved over millions of years with God guiding the process, and 9–14% have endorsed the secular evolutionary perspective that humans evolved with no guidance from God.²

I wondered how was it possible that so many people believed in something that science had shown to be false. When I looked into it, I found a fascinating set of justifications attempting to debunk what was labeled origins science (which consisted of geology, cosmology, and most important evolutionary biology) and replace it with what was called creation science (Scott, 2004). Creation science attempted to co-opt the powerful construct science and argue that true and good science did in fact lead to a view of the universe consistent with the literal interpretation of the Bible. For example Henry Morris, who many consider the founder of the modern young earth creation science movement, argued that the Grand Canyon was not caused by a river running through the rocks over the eons, but instead was the result of The Great Flood described in the Bible (Whitcombe & Morris, 1961). He founded the Institute for Creation Research, which attempts to argue that there is scientific support for a young earth.

The second reason I engaged in the debate was that the more I looked into it the more I became convinced that Young Earth Creationism (YEC) represented

²Although this is by far the most common statistic reported for tracking the presence of young earth creationist beliefs, I believe the question is flawed and should not be interpreted as the percentage of individuals who believe in a young earth. The reason is because a person could easily see humans as having souls given by God in recent history, but still believe in a theistically guided evolutionary narrative. A much better question to get at the crux of the age of the earth issue would be something along the lines of the following: *True or False Dinosaurs existed millions of years ago.* I believe this question would be answered false by a much smaller percentage of the population.

an enormous socio-cultural problem in America. Consider that prior to my debate I went to one of my opponent's lectures on creationism. In the question and answer period (which included such questions—asked in earnest—as whether or not Adam and Eve had bellybuttons), the hostility toward the “anti-God” liberal elite was palpable. The narrative that emerged in the room was that evolutionary theory was a religious and political movement sparked by hyper-educated atheists who deemed themselves superior to the common man and too narcissistic to submit to the will of God. It turns out this was not an isolated incident but is a central line of thought underlying American social conservatism. In his book, *What is the Matter with Kansas?*, Frank (2004) highlights how the culture wars are central to understanding the political divide in America and that the evolution–creationism debate is central to the culture wars.

The third reason I engaged in the debate was that the split between science and those who espouse creationist leanings is becoming ever more ingrained in American society, and the academy has not done much about it. For starters, some with postmodern convictions in the academy argue that both creationist and evolutionary views simply represent two different narratives (Levitt, 1999). This is an excellent example of the pernicious conclusions that can be reached from an ill-guided and extreme postmodern relativism. At an institutional level, there are now entire accredited universities, such as Liberty University, devoted to teaching individuals the veracity of YEC. And there are few systematic efforts by academics to enlighten (for an exception, see Scott, 2004). Mostly, there are strong warnings against engaging the creationists. I learned from fellow academics that creationists were experts at stacking the audience with supporters and using misleading quotations and findings as effective rhetoric, even if the ultimate argument was vacuous. My colleagues informed me that the creationists win by virtue of you showing up. Their goal is to get a hearing, to be seen as legitimate, and by engaging with them, one does just that.

Thus what we have is a great and problematic divide, with no effective lines of communication. Recognizing this dynamic and using my knowledge of psychotherapy and how people change, I shifted my goal from attempting to convince the creationists in the audience that they were wrong to demonstrating that people like me were not evil, amoral, or power hungry individuals who sought to control them. I went into the debate with the commitment to show that I wanted to engage with them in their lines of justification and to share with them why I believed what I did. I had seen that many of them were angry at the perception of power-mongering evolutionists, and I wanted to put a gentler face on it.

What does YEC have to do with the unified theory? It is an important justification system from the vantage point of the unified theory because the two are antithetical. The unified theory offers a post-postmodern scientific humanistic worldview. In contrast, like most literal fundamentalist religious perspectives, YEC is a pre-modern, anti-science, anti-humanistic justification system. The unified theory seeks to integrate and assimilate key insights of various perspectives to form a grand background of explanation from which a multitude of diverse, cultural, and individual justification systems can grow. But because it is a foundational system and

not all systems are ultimately founded on justifiable ideas, there are some major justification systems that simply do not fit, even in a modified form. And YEC is a striking example of a large-scale justification system that cannot be assimilated and integrated. Its defining characteristics are literally and diametrically opposed to the logical structure and evidentiary base of the unified theory. As such, it needs to be eliminated if the vision offered by the unified theory is to be realized.

At one level, the claim that YEC—and by extension literal religious fundamentalism in general—should be eliminated may sound to you as somewhat shocking, perhaps even dangerously totalitarian. The elimination of religious beliefs goes directly against foundational humanistic justifications, such as the freedom of people to believe what they want to believe. And in this regard, religious beliefs are especially sacred. They are a category of beliefs that do not and should not have to play by the same rules as other beliefs. Through the construct of religious faith, we should grant the legitimacy in belief beyond the evidence. As such, we absolutely do not want to claim absolutes about what is right and wrong when it comes to religious beliefs. Moreover, history is replete with examples of the incredible danger when systems in power are deciding what beliefs should and should not be eliminated.

And yet, ask yourself, what if almost half of the population of the United States believed that the earth was flat? Or that the earth was the center of the solar system? Wouldn't this be seriously problematic? With science and the scientific method, have we not developed ways to approximate the truth? Or, if you prefer, have we at least developed a system to determine beliefs that are false or inaccurate? And isn't the elimination of false ideas a sign of genuine progress? It must at least be acknowledged that false ideas have the potential for serious problems. These issues are complicated. In fact, they are at the heart of one of the basic human dilemmas we have not solved, which is how to reconcile an appreciation for multicultural diversity and religious freedom with the academy's knowledge of how the world and people actually work. The rise of postmodernism has a solution, but unfortunately it is not sufficient as it basically brushes questions of truth under the rug and prevents genuine guidance from emerging.

In America the split between creationists and evolutionists has resulted in great cultural divides that are unfortunate because, as with many divides, it readily results in mentalities that pit "us" versus "them." I felt the vitriol of the creationists when I went to my friend's lecture and found a seething hostility toward the anti-God intellectual elite. And to be honest, I have recognized my own vitriol as I recalled my concerns about the "ignorant rednecks" we might be surrounded by when we first considered the thought of moving to a rural southern town. Yet after 7 years of living in such a rural town and engaging our family in activities like a Southern Baptist basketball league, I have come to see my prejudicial stereotypes were just that. Christian fundamentalists are good people. They are moral, build strong communities, and attempt to manage the vicissitudes of life very much like any other group. They are just misinformed.

Why are they so misinformed? The fault lies in large part with the academy. The ultimate point I want to make here is that the academy would be in a much better

position to clarify the relationship between science, religion, and politics if it could be guided by a comprehensive scientific humanistic worldview like the one offered here. For starters, when the scientific discoveries are placed in narrative form like *The Universe Story*, a vision is offered that is much more easily comprehensible for lay persons. We should not overlook the fact that virtually all human societies have developed their philosophies in narrative form.

The controversy and confusion that has surrounded the Intelligent Design (ID) movement offers additional evidence that the lack of an effective scientific humanistic worldview sets the stage for upheavals resulting from confusing mixtures of science, religion, and politics. In brief, the ID movement argues that a careful examination of nature reveals evidence of intelligent design. The biologist Michael Behe, for example, argued that the biochemical mechanisms inside cells evidence an irreducible complexity that cannot be accounted for by Darwin's theory of natural selection and instead points to an outside designer (Behe, 1998). From the vantage point of the unified theory, this is an interesting and fairly radical idea that deserves a hearing, but like all extraordinary claims it would require extraordinary evidence prior to being accepted. And given how little scientific progress has been made on demonstrating irreducible complexity and how many holes have been shot through Behe's argument, most scientists consider the idea rebuffed.

What is most interesting, though, is what happened to ID as a political phenomenon. It became a major point of contention, controversy, and achieved large amounts of public support. The reasons stem from the following: (1) the need of the populace to believe in the possibility of God; (2) the fragmented nature of science and the ineffective way scientific knowledge is presented; (3) the view of some that science by definition deals only with the natural world and thus must exclude any evidence of supernatural powers because of a priori philosophical assumptions; (4) the amoral nature of natural science; and (5) the rise of postmodernism. The combination of these elements allowed politically minded proponents of ID to create a wedge between science and creationist views that could destabilize science's hold on political power structures.

Pennock (2010) detailed how Philip Johnson, the Godfather of the ID movement, was influenced by postmodernism and the negative consequences of scientific naturalism to mastermind "the Wedge," a strategy designed to unite the ID movement with YEC against the prevailing supposedly atheistic, materialistic, and reductionistic view advocated by natural scientists. The argument was developed to show that a scientific worldview rejected a priori any possibility of supernatural phenomena, and using the deconstructionist approach developed by postmodernists, Johnson argued that natural science was scientism that was held in place by nonempirical philosophical assumptions and political power structures.

If the unified theory—or a similar scientific humanistic worldview—were established within the academy and shared effectively with the public, there would have been no wedge with which to gain leverage. The claim of ID would have been framed appropriately as a descriptive claim and placed in the context of a scientific analysis. However, it would have been completely separated from the obviously false claims of biblical literalism. This is why I focus on the age of the earth as the

central point. YEC makes claims that are diametrically opposed to established scientific knowledge and are known to be false. It is a problem in society that needs to be addressed.

Toward the Fifth Joint Point

Whereas there will always be debates on how and why the universe story began, more pressing to me are questions of how the human aspect of the universe story ends. Will the combination of careless stewardship, population explosion, local realities clung to as the truth, and resource degradation and depletion end in global conflict and the destruction of Culture? Or will humankind continue to stumble through its existence, being pulled via the vicissitudes of various civilizations? Or will there be a phase transition, a pathway realized to a higher way of being? As humanity seems to be simultaneously sowing the seeds of its potential destruction and elevation, any of these outcomes appears possible. I am, of course, hoping for the third possibility, and I use the metaphor of the fifth joint point to provide an idealistic, transcendental beacon to guide my behavioral investments and justifications.

Over the past several years, I have become more and more concerned with what can be termed *ultimate justifications*. Ultimate justifications provide the foundational structure legitimizing the actions that follow. I used to believe that *the truth* was my ultimate justification. Following Kant, however, I now realize that the final end is not the accumulation of accurate knowledge because in the end accurate knowledge is not enough (Quackenbush, 2008). Further reflection has made me realize that I did not begin “the noble quest” (Calhoun, 2004) that resulted in the unified theory searching for accurate knowledge but instead I was concerned with questions of human betterment: What is the good life? How do I live it and share in it with my friends and family? And how, as a mental health professional, do I foster it in people who are suffering?

I have come to see the value in the unified theory as not being the extent to which it is true but the extent to which it increases the good. Consider that if I believed the unified theory was both true but also that it would lead to widespread destruction and suffering if shared, I would not promote it. These reflections have led me to the deeper questions regarding what it is that I am ultimately attempting to justify. Ultimately, I am attempting to justify the construction of the fifth joint point, a metaphorical passage to MetaCulture, a higher dimension of existence. To achieve this passage, we must merge information technologies with wisdom in a way that allows for the effective blending of the true and the good. A purely scientific worldview is insufficient because analytic truth value is not an end in itself but ultimately must work in the service of moral goals. For Kant, the ultimate goal is happiness with the worthiness to be happy (Quackenbush, 2008). While this resonates with me, I have come to frame it in slightly different terms. My purpose in life—my ultimate justification—is to *be that which enhances dignity and well-being with integrity*.

Dignity is the state of being valued or respected. I conceive of it here in two senses, one of which is fundamental and the other of which is incremental. Through much cross-cultural dialogue, the United Nations ratified the United Declaration of Human Rights (UDHR) in 1948, and in doing so it was ultimately concluded that human rights were justified on the grounds that all persons had dignity (Kohen, 2007). Although the various cultural and national groups could not agree on *why* people had dignity, there nevertheless was universal agreement that they did in fact possess a fundamental dignity. It was from this foundational starting point that basic human rights were justified. The second sense of the word, incremental dignity, refers to acts of individuals or groups that are worthy of respect, honor, and admiration (and, by implication, the reverse). Great works of art, noble acts of self-sacrifice such as that of Thich Quang Duc,³ or resilience in the face of major trials and tribulations are all examples of incremental dignity. Thus, while we each have the same level of fundamental dignity at birth, we must nevertheless also judge our actions on the extent to which they enhance or diminish incremental dignity.

Well-being refers to the state of health and happiness of individuals and groups at biological, mental, and social levels of existence (cf. The World Health Organization definition of health). It can be considered from the subjective, first person perspective, as well as a more third person or functional perspective. Subjective well-being can be divided into the experiential and justifying dimensions of human existence, with the former referring to the ratio of positive as opposed to negative feeling states (e.g., joy and contentment versus misery and anxiety) and the latter referring to the reflective evaluations made regarding the degree of satisfaction with life. The third person perspective refers to a more objective evaluation of the functioning of the various organic, mental, and social systems, along with the predicted future trajectory, and the impact on the well-being of others.

Integrity is the state of being honest, sound, and coherent. Whereas dignity and well-being are decidedly humanistic constructs, integrity includes the epistemic values such as accuracy, truth, and logical consistency and thus is more scientific in essence. For example, speaking personally, although believing in a higher power may well improve well-being and even plausibly be argued to increase human dignity, for me supernatural justifications do not cohere with my sense of intellectual integrity and thus I have not internalized them. Of course, if I were experientially touched by God like so many feel that they have been, such beliefs could then be grounded in the subjective element of justification and held with integrity.

I strive to be that which enhances dignity and well-being with integrity. I have found that whether I am teaching, being with my family, challenging those who do not see the world as I do, working on the unified theory, conducting psychotherapy,

³When I hear of terrorist attacks involving suicide bombers—an all too frequent occurrence—I often think of the contrast with Thich Quang Duc and consider the remarkably different reactions the two kinds of acts engender and think what a different place the world would be if those who were so committed to addressing the injustices they see would use only the sanctity of their own lives to make the point.

or even struggling with my own issues, I can use this ultimate justification as a guide. I can even conceive of it in a fairly objective, scientific way. To put it in social engineering terms: Can we construct societies that tend to enhance dignity and well-being with integrity? This hypothetical moral imperative is offered here at the end of the outline of the unified theory to clarify the foundational grounding of my scientific humanistic worldview so that the nature of the fifth joint point as I envision it might be understood.