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Pascal Boyer's Explanation of Religion

In my estimation, few scholars have contributed as much in recent years to our understanding of religion as has Pascal Boyer.
- Brian E. Malley

Pascal Boyer is Henry Luce Professor of Individual and Collective Memory at Washington University in St. Louis. He received a masters and PhD in Ethnology from the Université de Paris Nanterre and was a research fellow at King's College Cambridge for seven years and a senior researcher and Director of Research at the National Centre for Scientific Research in Lyon before joining the psychology department at Washington University. He has done anthropological or ethnographic field work in Cameroon, Nepal and Gabon, and much of his work has focused on the formation and transmission of religious and supernatural concepts. He regards the application of relatively recent ideas and methods of cognitive psychology and evolutionary biology as the way in which anthropology can become a true science.

Boyer is most widely known for his book *Religion Explained: The Evolutionary Origins of Religious Thought* published in 2001. It was recently recommended to me by friend in the context of a discussion where I had expressed some interest in the writings of Rudolf Steiner. My friend has little patience with religious dogma or the occult, and he found the tone of Boyer's descriptions of religious belief sympathetic. I read the book to see if it might help me clarify my own ideas about function or value of religion as well as the dangers of fanatical religious belief. I found the approach of the book to be alien and much of it off-putting to the the point of being annoying. For some reason I was unable to return it to the library and just chalk it up as not my cup of tea. Perhaps this is largely due to my own conflicted feelings about religion, and my analysis of Boyer's book will reveal as much about me as it does about his work. Surely that is the point of any kind of dialogue though, and I shall try to explore the context of my own reactions as well as the implications of Boyer's ideas.

The title of Boyer's book is a good indication of his goal in writing it. He wants to "explain" religion and is primarily focused on religious "thought." There is an anecdote at

the beginning of Chapter 9 which may show clearly where he is "coming from" in this project:

> Some Fang people say that witches have an animal-like, extra internal organ that flies away at night and ruins other people's crops or poisons their blood. It is also said that these witches sometimes get together for huge banquets where they devour their victims and plan future attacks. Many will tell you that a friend of a friend actually saw witches flying over the village at night, sitting on a banana leaf or throwing magical darts at various unsuspecting victims.
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> I was mentioning these and other such exotica over dinner in a Cambridge college when one of our guests, a prominent Catholic theologian, turned to me and said: "This is what makes anthropology so fascinating and so difficult too. You have to explain how people can believe in such nonsense." Which left me dumbfounded. The conversation had moved on before I could find a pertinent repartee-to do with kettles and pots. [RE-297]

Boyer also wants to know "how people can believe in such nonsense," but the nonsense includes Roman Catholic theology as well as beliefs associated with "primitive" sorcery and witchcraft. As a former Episcopalian who took very seriously the tenets expressed in the Apostle's Creed when I was a teenager, I confess that there is still a nostalgic part of my mind that bristles whenever one begins a discussion of religion by presuming a shared assumption that all religious belief is "nonsense ." As much as I enjoy Bill Maher I get tired of his reductionist dismissal of all religion as stupid and dangerous. At least Maher is a lapsed Catholic so to some extent he knows whereof he speaks. Perhaps Boyer's French education included a similar dose of Catholicism. I would prefer the question about religion to be "What is there of value in religion and how do we keep it from becoming perverted into something sick and even dangerous?"

The key to Boyer's explanation is that he seems to view "belief" as the heart of religion and his cognitive psychology understands belief as propositions inferred from information acquired by experience of the natural world or perhaps adopted from statements by others. One of the frustrating things about the book is that it is only towards the end that Boyer puts his cards on the table:

> After going through lengthy descriptions of the mental processes involved in the acquisition and representation of religious concepts, we know that it is rather misleading to talk about religion as a real object in the world. It is not a very good starting point to oppose, say, religion to science, or indeed religion to anything else, because it is by no means clear that there is such a thing as "religion" in the abstract. There are many mental representations entertained by people, many acts of communica-

> tion that make them more or less plausible, many inferences produced in many contexts. [RE-320]

He has been perfectly happy to write 300 pages of explanation relying on our common sense understanding of religion, but he whittles away most of the common ideas about the nature and function of religion until he has left only "religious concepts." To be fair, the context of the above quote is a dismissal of the "science versus religion" debate which reveals that there is also no such thing as science.

> For the same reason, it is very misleading to talk about science as if that were a real object in the world. Science too is a cultural thing, that is, a domain of mental representations that happen to be entertained by a number of human minds. There is no science as such but rather a large set of people with particular activities, a particular database that is stored in a particular literature, and a particular way of adding to or modifying that database. Which of these are we talking about when we consider "science versus religion"? [RE-320]

A "cultural thing" is not a "real object in the world." I was reminded of Margaret Thatcher's declaration that "there is no such thing as society," and I was unable to resist the impulse to re-read Heidegger's essay "The Thing" to refresh my understanding of what a "thing" is, but I'm afraid it did not help. In a more recent paper on the importance of Lévi-Strauss's contributions to anthropology Boyer elaborates a bit on his perspective:

> Lévi-Strauss clearly had no trust in the notion of "religion". He did not believe that the term denotes any coherent set of phenomena. He was, I will argue, quite right about that, but this of course did limit the appeal of his models for scholars of religion, many of whom do assume that there is such a domain as "religion", distinct in important ways from other domains of culture. [RE-164]

> Nothing in the various domains described above requires that we use the term "religion", except as a convenient, non-technical pointer to what we study. The term however is an impediment in more serious discussions of the social dynamics or cognitive processes involved. Unfortunately, the distinction is often blurred between useful common-sense term and analytical category. As a result, even serious scholars may be misled into thinking that one has for example, to account for the "evolution of religion", or how "the brain creates religion" or the social interaction between "science and religion". Such projects may well be doomed, as they associate a proper set of scientific objects (e.g. the evolutionary processes that led to human social life or cognitive dispositions) and a non-existent one ("religion"). [RE-171]

Perhaps in the explication of Boyer's argument it will become clearer how or why "evolutionary processes" and "cognitive dispositions" are proper "scientific objects" while "religion" is not. For now we shall stick with the scientist's explanation of religion. The fo-

cus has been narrowed to a "domain" of beliefs commonly labeled "religious," and the task is to explain why they are held by so many people. As the title indicates "explaining" means revealing their "origin," but it also requires showing why they have persisted through the ages. For Boyer the answer seems to be found in a model of how the mind works and in the nature of evolution.

Before I dive into the specifics of Boyer's theory, I'll cop to one other problem I have with him. Initially I was inclined to label it his prose style, but it seems to me to be part of what he is saying in a way that I would not normally expect the prose style of a scientific explanation to be. The most obvious aspect of this is his deliberate choice of non-technical jargon as in "gadget" (e.g. "In other words a lot of human culture consists of salient cognitive gadgets that have a great attention-grabbing power and high relevance for human minds as a side effect of these minds' being organized the way they are." [RE-235]) or "basement" (e.g. "What happens in the mental basement is not accessible, it does not consist of sentences, so we cannot be aware of the processes involved." [RE-305]). Another example is "invisible hand," and the real point of this gambit becomes clear in the final paragraphs of the book:

> Instead of a religious mind, what we have found is a whole frustration of invisible hands. One of these guides human attention toward some possible conceptual combinations; another enhances recall of some of these; yet another process makes concepts of agents far easier to acquire if they imply strategic agency, connections to morality, etc. The invisible hand of multiple inferential systems in the mind produces all sorts of connections between these concepts and salient occurrences in people's lives. The invisible hand of cultural selection makes it the case that the religious concepts people acquire and transmit are in general the ones most likely to seem convincing to them, given their circumstances.
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> I call this a frustration because religion is portrayed here as a mere consequence or side effect of having the brains we have, which does not strike one as particularly dramatic. But religion is dramatic, it is central to many people's existence, it is involved in highly emotional experience, it may lead people to murder or self-sacrifice. We would like the explanation of dramatic things to be equally dramatic. For similar reasons, people who are shocked or repulsed by religion would like to find the single source of what is for them such egregious error, the crossroads at which so many human minds take the wrong turn, as it were. But the truth is that there is no such single point, because many different cognitive processes conspire to make religious concepts convincing.

> I am of course slightly disingenuous in describing this as a frustration, when I think it is such a Good Thing. That we fail to identify hidden hands and simple designs and instead discover a variety of underlying processes that we know how to study sometimes happens in scientific endeavors and is always for the better. The progress is not just that we understand religion better because we have better knowledge of cognitive processes. It is also, conversely, that we can highlight and better understand many fascinating features of our mental architecture by studying the human propensity toward religious thoughts. One does learn a lot about these complex biological machines by figuring out how they manage to give airy nothing a local habitation and a name. [RE-330]

It seems that for Boyer scientific explanation is a way of draining the hyperbole or drama out of ordinary discourse. He wants his explanation to come across as almost disappointingly mundane. Religious thoughts amount to "airy nothing" whereas science has its feet firmly planted on the ground. Sometimes I think the mundane quality of cognitive psychology backfires on him, as in "These well-known results demonstrate the extraordinary strength of the human propensity toward group solidarity, toward what Matt Ridley called "groupishness."" [RE-13] I'm not sure I would want to have my academic reputation promoted on the strength of having coined the term "groupishness" to denote a propensity towards group solidarity. As will become abundantly obvious, the impression I have of cognitive psychology based on reading Boyer's book is that it is indeed pedestrian in a way that I do not find psychology, evolutionary theory and neuroscience to be in other contexts.

When Boyer says something like, "Science too is a cultural thing, that is, a domain of mental representations that happen to be entertained by a number of human minds," I am reminded of the way in which Richard Rorty delighted in debunking complicated philosophical arguments by reducing them to a lively dinner-table conversation and pointing out that the ideas people held were completely contingent upon their social circumstances. Rorty's prose, however, is lively, and I admire the commitment to social justice that drives it. With Boyer's I confess I get a mild aroma of smugness or even condescension. The opposite extreme that occurred to me as I plodded my way through Boyer's book is Oliver Sacks, whose writing is as filled with compassion as it is based on years of unbounded intellectual curiosity and clinical experience.

For most of my life I gave little thought to evolutionary theory. When I was in college a friend of my parents gave me a copy of *The Phenomenon of Man* by Teilhard de Chardin with an affectionate admonition that it was considered a radical and dangerous book by

many. I was intrigued, but the reconciliation of Christianity with evolutionary science was not a live issue for me. I was perfectly happy to accept evolution as a well established theory based on solid scientific evidence. Much later in life when I attempted to return to my philosophical preoccupations in a disciplined way, one of my mentors suggested reading Susanne Langer's monumental exploration of the relationship between human mentality and biological evolution, *Mind: An Essay On Human Feeling*. In college a classical pianist had recommended Langer's *Philosophy In A New Key* when I asked him questions about the meaning of music. I was completely taken with it and have always considered it the best philosophical interpretation of art I have ever come across, but I never had read any of her later elaborations on feeling and form. Langer had concluded that symbolism was the key to human thinking, that there is a direct connection between organic life and the formation of symbols, and that seeing how the brain evolved to the point where humans became capable of language and culture was essential to understanding "mind" as a completely natural development without the introduction of any metaphysical or "supernatural" influence. This offered me a completely new perspective on all the issues of language and meaning that I had been wrestling with in the context of philosophy. It enabled me to see that science was not something irrelevant to philosophical explorations. It also reinforced a conviction I had recently formed that Oliver Sacks should be studied in philosophy courses.

My enthusiasm for evolutionary biology hit a dead end, however, when another mentor suggested reading Daniel Dennett. I read *Darwin's Dangerous Idea*, and I think the following extract from my email report to the mentor may help in understanding my response to Boyer:

> I found the first third of it engaging and readable. I think I got the point about evolution as an algorithmic process. Since I have done computer programming I thought I understood the notion of an algorithm even though I have never really had any interest in computer science as such or the kinds of computer programming involved in artificial intelligence. Years ago I tried to read *Gödel, Escher, Bach* and while I found it impressive and intriguing at times, I was unable to finish it. I had forgotten what Gödel's theorem was even about. At any rate I found Dennett's explanations refreshingly clear and readable.
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> Then during the second third of the book I began to lose patience and I began to find his descriptions of controversies in evolutionary biology and philosophy of science tiresome. I began to feel I was being dragged into the middle of a Battle of Books which really did not interest me.

> I began to realize again how grateful I am that I studied philosophy at Yale rather than Harvard in the 60's or Tufts in the 80's. The "thought experiments" and references to checkers-playing computers or game theory have nothing to do with the "love of wisdom" that I think of as philosophy. At one point it even struck me that the reason I was reading this book might be because I had confessed to you that Dewey and Langer had caused me to reconsider the validity of scientific thought as an approach to philosophy and you felt Mr. Dennett would cure me of that delusion! It surprised me how different reading Dennett was from reading Langer. I can well imagine that Langer is considered "outmoded" (I was surprised that she does not even exist in Dennett's world.), but I cannot accept that Dennett's version of evolutionary biology is the replacement for hers. At some point about two-thirds of the way through the book, I felt as though I smelled something like a conviction that Mind defined as algorithmic "decision-making" is the be-all and end-all of life and that science is, despite all the careful disclaimers, the Truth that makes us Free. I started recalling Lyotard's fable about self-replicating computers replacing the human race and realized that once again I felt "who cares?" I think what I missed in Dennett and found so abundant in Langer was an appreciation for the imagination and the primacy of "feeling." Langer may have been headed into the territory now occupied by Dennett and "cognitive science" but she (ironically) went blind before she got there. Certainly her sense of the way in which dream and ritual preceded language in the evolution of mind is nowhere to be found in Dennett.
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> Dennett seemed to be saying that truth was simply a matter of stringing together the right characters in the right order.
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> By the time I got to the last third of the book I had really had it with his "skyhooks" and "memes." The skyhook metaphor, which I felt was useful when it was introduced, seemed to have degenerated into a hatchet for attacking a wide range of benighted thinkers. Meme, actually, I never really bought. I don't know why it helps to coin a word rather than just talk about "ideas." The application of it seemed so broad and vague as to be useless. It became very clear to me that I prefer Norman Brown and even Michel Foucault to Dawkins and Dennett when it comes to "cultural evolution."

Boyer's appropriation of evolutionary theory seems relatively straightforward:

> To take a simple and familiar example, most humans have a sweet tooth because sources of sugar and vitamins were few and far between in our ancestral environments. A taste for rich sources of such nutrients – the same goes for animal fat as a source of energy and meat as a source of protein – developed simply because whatever genes caused that propensity were very likely to spread. Bearers of such genes would tend to have more offspring than non-bearers and some of their offspring would carry these genes too. [RE-116f]

This strikes me as a somewhat peculiar explication of the process of evolution. His point is presumably that a "sweet tooth" is not necessarily a completely beneficial "propen-

sity" given the contemporary environment in which humans live. It can lead to obesity, tooth decay, and other health problems if it is not tempered by other factors. So it makes sense perhaps to question why we have such a propensity. I am not sure why he connects a sweet tooth with sources of vitamins as well as sugar. That we like sweets because they taste good is not an answer. The question just becomes why it "tastes good." His answer seems to amount to metaphorical projection of some health directive into ancient times. Our ancestors developed a taste for sugar and vitamin-rich foods because it was necessary for their health. Those who did not died off. Those who did developed genes which passed that taste along to their offspring. There is no explanation for why the first generation ancestors who liked sugar did so. Presumably it did not "taste good" to them yet since they had not developed the propensity. Did they "know" on some level that it was good for them? How do animals "learn" what to eat? The example implies that our ancestors already knew to eat sugar and vitamins and knew that it was hard to find foods that contained them so that somehow developed a propensity to seek them out whenever they could.

Boyer's description seems to give primacy to genetic mutation. The ancestors who had "whatever genes caused that propensity" were the ones whose progeny multiplied. This implies that those ancestors did not "learn" to like sweets, some alteration in their genes caused them to have a greater predilection for sweets. I suppose one can speculate that there is some kind of "feedback loop" in the organism that senses the benefits of sugar to the system and creates a desire for more so that the organism "develops at taste" for sugar. That taste then becomes "developed" to the point that it gets "encoded" in some gene. This would, however, imply that any ancestor who ever consumed sugar would develop a taste for it – even the offspring of those who had died of malnutrition.

I gather that evolutionary theory often ascribes genetic mutation to pressure of some sort on the organism from the environment – perhaps as the environment changes. I have no idea how that "pressure" is presumed to work, but this to me is one of the most fascinating aspects of evolution. The question in my mind is whether genetic mutations may just be random occurrences in which Mother Nature is throwing things against the wall to see what sticks or whether they are somehow driven or directed. Did the oceans change in some fundamental way that pressured creatures to develop the ability to breathe and live

above water? The fact that plenty of creatures were happy to continue living underwater seems to undermine that notion. That seems to leave the options of totally random mutations occurring by chance or something inherent in "life" that drives it to assume ever more complex forms. I'm inclined to see something awe inspiring and wonderful going on in evolution even if it is just an inexorable impulse to roll the dice and see what happens. That is part of why I see no conflict between evolutionary theory and what I think of as "religion." It is also why I find Langer's attempt to explore the connection between life, organic form, feeling and symbolic thinking so impressive.

Boyer leaves it to the biologists to explain the impact of sugar on the functioning of the organism and to geneticists to explain how repeated doses of sugar (or perhaps the absence of sugar in a diet) can result in genes which program the offspring to seek sugar without having to "learn" its value in the same way. He is content to point out that what seems like a completely hard-wired instinct in so many people (a sweet tooth) is the result of an adaptation of the human organism to its environment eons ago that produced a genetically inherited trait. What he is interested in is the framework of adaptation and natural selection and how it can be applied to beliefs and culture. The question he asks is why beliefs regarding "supernatural" phenomena or entities were useful (or adaptive) in the early stages of man's evolution and why certain of those beliefs had staying power so that they were culturally transmitted down through the ages. He does not talk about the biological basis of belief or the relationship between mental processes and the physiology or evolution of the brain other than saying that neuro-imaging and pathology demonstrate that different sections of the brain are active during different mental processes or types of thought.

Langer is very clear about the danger of using certain kinds of models as a framework for understanding the human mind:

> It was the discovery that works of art are images of the forms of feeling, and that their expressiveness can rise to the presentation of all aspects of mind and human personality, which led me to the present undertaking of constructing a biological theory of feeling that should logically lead to an adequate concept of mind, with all that the possession of mind implies. The fact that expressive form is always organic or "living" form made the biological foundation of feeling probable. In the artist's projection, feeling is a heightened form of life; so any work expressing felt tensions, rhythms and activities expresses their unfelt substructure of vital processes, which is the whole of life. If vitality and feeling are conceived in this way there is no sharp break, let alone metaphysical gap, between physical and mental realities, yet there

> are thresholds where mentality begins, and especially where human mentality transcends the animal level, and mind, *sunsu stricto*, emerges.
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> An image is different from a model, and serves a different purpose. Briefly stated, an image shows how something appears; a model shows how something works. The art symbol, therefore, sets forth in symbolic projection how vital and emotional and intellectual tensions appear, i.e. how they feel. It is this image that gets lost in our psychological laboratories, where models from non-biological sciences and especially from intriguing machinery have taken the field, and permit us to analyze and understand many processes, yet lead us to lose sight of what phenomena we are trying to analyze and understand. [MvI-xviiif]

Boyer's cognitive psychology seems to view the mind through the lens of "computation."

> But human emotions are not that simple. They happen because the mind is a bundle of complicated systems working in the mental basement and solving very complex problems. Consider a simple emotion like the fear induced by the lurking presence of a predator. In many animals, including humans, this results in dramatic somatic events-most noticeably, a quickened heartbeat and increased perspiration. But other systems also are doing complex work. For instance, we have to choose among several behaviors in such situations – freeze or flee or fight – a choice that is made by *computation*, that is, by mentally going through a variety of aspects of the situation and evaluating the least dangerous option. So fear is not just what we experience about it; it is also a program, in some ways comparable to a computer program. It governs the resources of the brain in a special way, quite different from what happens in other circumstances. Fear increases the sensitivity of some perceptual mechanisms and leads reasoning through complicated sets of possible outcomes. [RE-19f]

The mental process that most interests him is "inference," which seems to be the main type of information processing done by the brain or mind. What is produced by inference system is an "intuition," something which could be translated into a proposition but which is not verbalized or thought that way. It is produced without without conscious thought and passed along as information to some other system. It can result in behavior that is regarded as "instinctive," although Boyer does not really talk in terms of instinctual behavior. The computations involved in intuitions may be very complex. One example he gives is how a person can tell what someone else is looking at or at least the direction of their gaze from the amount of white on each side of the pupil of his or her eyes. To program a computer to analyze an image of a face and compute the direction of the gaze is obviously a fairly complex task. In the human brain it is performed by an inference system in a matter

of microseconds (just as it could be by a device once the program were debugged and hardwired into its circuitry). "Belief" seems to be a generalization based on some set of intuitions. It *raison d'être* is totally pragmatic; it is a trigger for some type of action or behavior.

The idea of the mind as a data processor is obviously not new. It has been around for centuries although the terminology has changed over the years. For Locke the mind was a blank tablet on which the senses imposed knowledge of the world. Others have assigned a more active role to the mind in shaping the perceptions of the world, but the end result can still be considered "data" which is "processed" by the mind and stored in memory. What is apparently the defining moment for cognitive psychology is the insight that the mind is not a coherent hierarchical system. The mind is apparently composed of many "inference systems" where each system specializes in a particular type of data.

> A description of our minds as a bundle of inference systems, differently activated by different objects, is better than that of a mental encyclopedia because it is much closer to the way a brain is actually organized. That is, there is no general "catalogue of all things" in the brain with their different characteristics; nor is there a division in the brain between the bits that deal with animals, those that deal with persons, those that only consider artifacts, etc. Instead, there are many different functional systems that work to produce particular kinds of inferences about different aspects of our surroundings. This is not just theoretical speculation: that there are different systems, and that they are narrow specialists, is made manifest both by neuro-imaging and by pathology. [RE-102]

He is not just saying that each of the senses is handled by a separate part of the brain. What he refers to as "different aspects of our surroundings" can each involve all the senses as well as data passed along from other parts of the brain or nervous system. Oliver Sacks's books are filled with examples of how injury or malfunction of one part of the brain can produce often bizarre alterations in mental capacities or functioning that do not seem to correspond to any simple common sense model of the mind. Boyer's cognitive psychology model of the mind seems to involve any number of "inference systems" which function relatively independently. In order to understand the way in which data is filtered and categorized so that it can be directed to the appropriate inference systems we need his analysis of concept formation, but the most important thing is that he knows the "inference systems" function the way they do because they can be revealed to do so in psychological tests or experiments. This is what makes cognitive psychology a true science.

Part of my mind wants to wrestle with "inference" as a form of computation or data processing. My programming skills are not sophisticated enough to begin to understand artificial intelligence, and my personal model of the mind as a computer program cannot get much beyond conditional ("if…then") logic and pattern recognition. So I am inclined to give Boyer a pass on his model of the mind based on "inference systems" or at least to see how far he can ride it.

Concept formation is, to my mind, one of the great mysteries of philosophy, and it is part of the mystery of language and "meaning." Martin Heidegger and James Joyce seem to be the high priests in this cult, but I have never been able to follow them all the way into the temple. Norman Brown, who may just be a deacon or acolyte, is someone whose writing I love and find inspiring, but even with him I get lost more than I like to admit. Brown introduced me to Owen Barfield, whose analysis of metaphor and the evolution of consciousness as revealed by etymology is surely the most profound and accessible account in English. Barfield was of course an Anthroposophist, and it was Steiner's explanation of how we can have access to "hjgher worlds" that eventually resulted in my reading Boyer's book.

For Boyer there is nothing mysterious about concept formation, or at least there is nothing that cannot be adequately explained by science. In this book he is not concerned with the origins of language or any ultimate questions about the nature of thought. He is concerned about "religious" concepts – explaining how they were acquired and why they persist. His description of how new concepts are acquired is based on the assumption that the mind acquiring the concept already has many concepts and has encountered something in the world which is unfamiliar, i.e. about which it does not already have a concept. His analysis of the process is built on the role of inference, a mental encyclopedia, expectations, and ontological categories.

To illustrate the process of acquiring a new concept Boyer analyzes what happens when he presents the reader with new information in the form of the statement: "Zygoons are the only predators of hyenas." Since it is a creature he made up, we are faced with a new label, that of the zygoon. We create an entry for zygoon in our mental encyclopedia and we immediately know to classify it as an animal (presumably because we already understand the concepts of "predator" and "hyena"). "Animal" is an "ontological category," which is an abstract concept involving a host of "default inferences." These inferences yield

all manner of "expectations" about a zygoon, many of which imply causal links between a variety of facts.

The real point of this analysis is that we can entertain fleshed out concepts of imaginary objects. We can see immediately that we can acquire concepts about "supernatural" entities or forces which are not "real." The question then is why any concept about an imaginary entity or force would be retained and passed on.

Apparently the idea of modeling the brain as composed of many inference systems was something of a breakthrough in psychology especially when it was combined with ideas of evolution:

> The situation changed when … developmental psychologists and neuropsychologists began to demonstrate more and more specialized inference systems… So one could now combine the psychological findings with their evolutionary background, a combination that is now generally known as *evolutionary psychology*. The main point was that we could better understand how human minds are organized if we took into account what specialized systems in the brain are for, how they are supported by special routines in the brain and under what conditions they evolved through natural selection. This required the connection and combination of evidence from evolutionary biology, genetics, neurophysiology, psychology and anthropology. [RE-117f]

I shall leave it to you to read Boyer's full analysis of the way in which inference systems function, and jump ahead to the places where I really start to question the validity of his model. I would have thought that the evolutionary perspective would suggest that concepts were retained because they were useful in coping in some way, but this is not the case:

> We like to think that we have certain concepts or hold certain beliefs because it is in our interest, because they seem rational, because they provide a sound explanation of what happens around us, because they create a coherent worldview, and so on. But none of these views explains what we actually find in human cultures. It seems more plausible that cultural transmission is relevance-driven. That is, concepts that "excite" more inference systems, fit more easily into their expectations, and trigger richer inferences (or all of these) are more likely to be acquired and transmitted than material that less easily corresponds to expectation formats or does not generate inferences. We do no have the cultural concepts we have because they make sense or are useful but because the way our brains are put together makes it very difficult not to build them. [RE-164]

There seems to me to be something circular about this conclusion. Presumably our brains are "put together" by evolutionary forces which select the most useful architecture

for a given environment. Unless that environment changes, the brain will continue to "build" useful concepts, i.e. its inference systems will be attuned to its environment so that the concepts that excite the inference systems are in fact the useful concepts.

The task of explaining the prevalence of useless beliefs also leads Boyer to paint himself into an interesting corner regarding culture in general:

> [M]any cultural creations, from visual art to music to the low status of tanners to the fascination of corpses, are successful because they activate a variety of mental capacities, most of which have other, very precise functions. In other words a lot of human culture consists of salient cognitive gadgets that have a great attention-grabbing power and high relevance for human minds as a side effect of these minds' being organized the way they are. [RE-235]

Perhaps the most generous reading of this is in terms of an aesthetics of play, where cultural creations are kind of collateral froth that entertains parts of the mind when they are not needed for survival. Needless to say the image of art and music as "salient cognitive gadgets" does not resonate with me and makes me want to ask whether cognitive psychology may also be a similar cognitive gadget. In fairness I should say that I have read theories treating all of culture as an attempt to expend excess energy that I do find intriguing (e.g. *The Accursed Share* by Georges Bataille).

Another way I balk at Boyer's argument is that I question whether it is appropriate to assume that ancestral brains functioned in the same way as the brains of those submitting to tests or experiments by cognitive psychologists. Boyer himself in his most recent book emphasizes the need to avoid "anthropomorphizing" humans.

> When we try to explain why people do what they do, our natural inclination is to see them as persons. That is, we assume that people's behavior is caused by their intentions, that people have access to these intentions, that they can express them. We also assume that people are units, that is, each individual has preferences, for example, for coffee over tea, so that it would be strange to ask what part of them has those preferences or how many subparts of them favor coffee. We treat people as whole and integrated persons. In other words, we anthropomorphize them.
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> That is just as wrong for a science of people as it was for the science of rivers and trees. Indeed, for centuries, being anthropomorphic about people has been the main obstacle to having a proper science of human behavior. The notions that people have definite reasons for behaving, that they know these reasons, that there is a control unit inside human minds that evaluates these reasons and governs behavior-all these assumptions are terribly misleading. They hinder proper research and should be abandoned.

> …[W]hen it comes to understanding the actual causes of behavior, what we know of human minds and their neural underpinnings suggests that we should dispense with the notion of a centralized pilot, that an expressed preference for tea over coffee may involve dozens of mostly autonomous systems – in short, that we must do with minds what we routinely do with cars, look under the hood and figure out how distinct parts contribute to the general effect, so to speak. [MS-24]

One of the beauties of Langer's work is that she is able to convincingly describe the evolution of the brain and nervous system up to a point where imagination begins to happen in the form of dreams which are indistinguishable from perception. She also makes a convincing case for a kind of communion which is prior to any form of communication between individuals and for the possibility that language grew out of dance and chanting as an expression of shared feeling. The earliest "religious" rituals may have emerged at a point where the "world" was in fact filled with "supernatural" entities, where places were felt to be "sacred" and trees or rock formations gave rise to a shared sense of awe.

Barfield's exploration of the history in English words suggests that even as late as the middle ages the "normal" sense of participation or immersion in the world was radically different from the kind of subject/object dichotomy assumed by Descartes. What Barfield sees even in recorded history is an evolution of consciousness gradually emerging from "original participation" in the world to modern individualism and pointing towards an even more evolved conscious participation.

Boyer's discussion of the way in which our ancestors acquired and transmitted religious beliefs sometimes strikes me as comparable to way in which libertarian economists trace the existence of money back to a forms of barter in primitive societies. Such an account is at best a metaphor characterizing the function of money in modern economies and at worst a myth which pretends to be anthropology and frames discussions about contemporary economic policy. Boyer has of course done anthropological field work himself and draws heavily on the research of other anthropologists, but he does point out that questions asked of indigenous subjects often make no sense to them. Even with subjects in urban American or European settings, it is clear to him that "people often do not believe what they believe they believe." [MS-107] All the anthropologist or ethnologist can do is observe behavior and then interpret it to determine what mental processes may be associated with it. Application of a model of the mind based on contemporary research using cognitive psy-

chology may not be the best way to interpret behavior of pre-historic man. If the brain is subject to the principals of evolution why would not the mental processes associated with it also evolve? To assume that our ancestors inferred things the same way we do may be a mistake.

More importantly does evolutionary psychology of this sort really "explain" anything significant? I'll take two samples that struck me.

In his most recent book Boyer sets himself the task of explaining what Karl Jasper's called the Axial Age (600 BCE to 100 CE) when a variety of traditions emerged in cultures across the globe that emphasized "the cultivation of the self."

> So the Axial Age matters, because the movements that appeared at that point in history had a considerable influence on subsequent religions. Indeed, the so-called world religions of today are all descendants of these movements.
>
> So what explains the appearance of these doctrines, at roughly the same period in three different regions? A striking aspect of this development is that religious innovations appeared in the most prosperous societies of the time, and among the privileged classes in these societies…
>
> But why would prosperity, and life among the upper classes of nobles and rich merchants, favor such ideologies? We have little more than speculative answers, whose value lies mostly in their parsimony and their congruence to independent evidence and accepted science. One possible explanation is a form of snobbery, whereby people signal their great wealth and status by ostentatiously renouncing (some of their) wealth and status, thereby signaling that they can afford such losses. As this is a common phenomenon in many distinct species, including humans, the cognitive machinery for such displays is obviously available.
>
> Another factor may have been that great affluence creates a situation of sharply diminished returns for some people acquiring more food or seeking greater social status and dominance. To those who have satisfied most evolved needs, an extra investment in such activities does not result in matching satisfaction. Individuals who have reached an extreme of relative affluence may become interested in doctrines that prescribe moderation and self-control, and feel the benefits of putting these recommendations into practice. People in such situations would spontaneously adopt attitudes of patience and long-term investment. As a result, they would find ideologies of moderation and preservation of the self intuitively appropriate and therefore compelling. But the explanation of course remains conjectural, given the fragmentary evidence. [MS-109f]

Boyer is able to toss a couple of crumbs and walk away from this question in a chapter entitled "Why Are There Religions?" because he has defined away the very idea of religion involved in the "so-called world religions." He can account for many of the seemingly

preposterous beliefs associated with religions because he is more comfortable analyzing the mental processes of pre-historic man than he is those where there is a considerable historical record of the emergence and evolution of the ideas of the self and what ails it. He has made it clear that from the scientific perspective there is no such thing as a coherent self much less a "soul," and presumably any attempt to explain the emergence and persistence of this particular set of beliefs is beyond the purview of cognitive psychology without more evidence. I'm not sure that imputing snobbish one-upmanship to non-humans strengthens his case; nor is it clear to me that the initial appeal of Christianity, Islam and Buddhism was exclusively or even primarily to the leisure class. Jesus was, after all, a carpenter and at least two of his disciples were fishermen.

My second sample of his reasoning is his analysis of the role of mortality in the appeal of religious concepts. Many people, myself included, associate the appeal of religion with a desire to overcome death. Certainly a large strain of Christian dogma seems to emphasize victory over death with eternal life, and my main concern when my adolescent religion began to evaporate was how life could have meaning if there was no "life after death." In retrospect I have concluded that my religion served two purposes: it made me feel a part of something grand and it allayed concerns I had about death. I have also concluded that ideas about rebirth, resurrection and eternal life need to be interpreted mythically or symbolically rather than literally.

Boyer's analysis of rituals associated with death leads him to the conclusion that "religion may well be much less about death than about dead bodies." [RE-228] Apparently religious beliefs have less to do with anxiety about one's own death or coping with the loss of loved ones than it does about the way in which the brain processes information when confronted with a human corpse. I have trouble following his argument, but I shall give it a try in the hope that it will help clarify his basic approach to the persistence of beliefs.

First of all he dismisses the commonly held view that religion appeals to people because it offers consolation about death.

> But what about mortality? Religion the world over has something to say about what happens after death, and what it says is crucial to belief and behavior. To understand this, however, we must first discard the parochial notion that religion everywhere promises salvation, for that is clearly not the case. Second, we must also remember that in most places people are not really motivated by a metaphysical urge to explain

> or mitigate the general fact of mortality. That mortality is unbearable or makes human existence intrinsically pointless is a culture-specific speculation and by no means provides universal motivation. But the prospect of one's own death and the thoughts triggered are certainly more to the point. How do they participate in building people's religious thoughts, how do they make such thoughts plausible and intensely emotional?
>
> The common shoot-from-the-hip explanation – people fear death, and religion makes them believe that it is not the end – is certainly insufficient because the human mind does not produce adequate comforting delusions against all situations of stress or fear. Indeed, any organism that was prone to such delusions would not survive long. Also, inasmuch as some religious thoughts do allay anxiety, our problem is to explain how they become plausible enough that they can play this role. To entertain a comforting fantasy seems simple enough, but to act on it requires that it be taken as more than a fantasy. The experience of comfort alone could not create the necessary level of plausibility. [RE-21]

The reason "the notion that religion everywhere promises salvation" is erroneous is presumably because prior to the Axial Age, religions did not all offer hope of heaven for the righteous. People could believe supernatural entities or forces without tying that belief to concerns about being saved from hellfire and damnation after death. In other words concerns about "salvation" are not apparent in all "religions" so they cannot explain the appeal of religions (which may involve concerns about salvation). I'm sure I'm missing his point, but this gambit seems to rely on the notion that we are explaining "religion" and that it is a coherent phenomenon. Later, of course, he debunks this notion and says that one can only scientifically investigate various "religious" beliefs, many of which have nothing to do with death and an afterlife. Part of what bothers me about his book is that it seems to be written backwards. He uses common sense ideas about religion to build a case which reveals that those ideas are mistaken and to illustrate his model of how the mind functions rather than starting with a clear explication of how the mind functions and then showing its relevance to religion as it is commonly thought of.

Boyer also equates anxiety about death with "other situations of stress and fear" so that the implication is that delusions which deny the source of the fear are not conducive to survival. If existentialism taught me anything it is that there is a difference between anxiety and fear and that the sense of our own mortality is a fundamental component of human being which informs all our efforts to cope. I am tempted to agree that fantasies denying the reality of death are not conducive to survival if by "survival" one means being fully alive, but

this is not what Boyer is about. Nor does he entertain the idea that eternal life may be something that happens here and now rather than simply a continuation of some form of this life after the body dies.

I shall step over this pothole in the path in order to stay on Boyer's trail as he explains why concerns about death have more to do with corpses than with concerns about mortality in general because this is where his real argument seems to unfold.

> What makes anthropology worthwhile is that it forces us to question what would seem self-evident. We know that people the world over follow special ritualized recipes to handle dead bodies. We do not usually look for the causes of that behavior, because we think the rituals in question express some definite, explicit beliefs about death and mortality. But then it seems that in many places beliefs about death are in fact quite vague; only beliefs about dead bodies seem definite. So instead of adding our own vague hypotheses to people's vague concepts, we should perhaps consider the facts that are right under our nose. The reason why people feel the need to handle corpses, the reason why they have done that for hundreds of thousands of years may well be something to do with the corpses themselves. Or rather, something to do with the way a human mind functions when faced with that very particular kind of object. [RE-212]

Cognitive psychology tells us how the mind processes information when confronted with a particular object, in this case a dead human being. Any number of inference systems may be activated by aspects of this object and the various inferences systems may produce conflicting or contradictory intuitions. The systems that seem to be the most crucial when confronted with the body of a dead person are the "animacy system" (which is activated by animate objects as opposed to inanimate objects), the "agency system" (which is activated by objects to which intentional behavior is attributed) and the "psychology system" (which is activated by objects that are persons). Perceiving the corpse of someone we know also calls up all the data we have stored in our "person file" about this individual.

> Being faced with a dead person triggers a complex set of inferences from various systems, and these do not seem to match. The sight of a dead person certainly activates particular inferences from the animacy system When we see dead animals, we have similar intuitions. We intuitively assume there there is a time at which the animal will cease to move for good, and that it does not have goals or objects of attention after that. For persons, the situation is a bit different because of the animacy system and the intuitive psychology system typically exchange lots of information with the person-file system.
>
> Now something happens with the death of known people that is both familiar as an experience and rather strange once described in terms of these systems. On the one

> hand, the animacy system is quite clear in its output concerning such persons. They are ex-persons, they have no goals, etc. On the other hand, it seems that the person-file system just cannot "shut off." It keeps producing inferences about the particular person on the basis of information about past interaction with that person, as if the person were still around. A symptom of this incoherence is the hackneyed phrase we have all heard or used at funerals: "He would have liked it this way." That is, he would have approved of the way we have conducted his funeral. Now, as many people have felt as they uttered this, there is something compelling and yet absurd about such an idea. Judging whether ritual arrangements are appropriate is a typical action of live beings; the only way you can have your own funeral is by becoming a dead body, and dead bodies do not pass judgement on things, indeed do not do anything. Still, the thought occurs and seems somehow natural because our person-file system is still active and because its inferences are produced without using the information provided by the animacy system. It is when we confront the two sources of information that the sentence becomes absurd.
>
> We all run person-file based inferences on dead people. We are angry at dead people, we approve of what they did, scold them for having done this or that and very often resent them for dying in the first place. Now note that all these feelings are about beings for whom the animacy system would undercut such inferences immediately. In other words, being faced with a dead person whom we knew is very much like being affected by one of the dissociative pathologies I described above. That is, one of the inference systems is busy producing inferences while another delivers output that excludes such inferences. [RE-222f]

Two things strike me about this step in his argument. First is the notion that our animacy system enables us to intuit that an animal will die. I immediately think of the two times I have witnessed a child begin to grapple with the idea of death. We learn that animals die more or less in the same way we learn that people die. I am convinced that the death of an animal can be upsetting for a child not only because it may be a loss of a beloved but also because it evokes intimations of the child's own mortality and the fragility of all life. Boyer considers the possibility that mortality in general may be a source of terror and concludes that the study of inference systems suggest that

> *being preyed upon* is a much more salient source of intuitions and emotions. In actual fact, dead prey are only a subset of dead bodies. But our intuitive systems may actually interpret things the other way around, with prey being a well-understood object and other dead bodies being represented in terms of an analogy with prey. So, inasumch as the sight of a corpse triggers associations with anguishing realities, this may be because a dead person is, to some extent, represented as the victim of a successful predation. [RE-226]

He has already acknowledged that contemporary children for the most part have little experience of predation in the real world, but says fantasies involving fears of monsters and the like are evidence that even very young children have inference systems about predation presumably as a result of evolution. The predatory inference system enables a child to understand that animals die but apparently does not enable them to understand that people die. This is because there is a separate inference system dealing with people. Boyer says that cognitive psychology has revealed all these various inference systems through tests and experiments, but I confess sometimes they seem to me to be ad hoc ways to "explain" certain kinds of thinking. I am not convinced that a child's fantasies about monsters and the ability to recognize that animal prey are dead reveal a predatory inference system rather than some other inherent sense of mortality.

Secondly I see no contradiction between imagining how another person might respond to a situation and knowing that person can die or is dead. To claim the statement that a person would have liked the way his funeral was conducted is not absurd. To say so seems to me to be deliberately turning a tin ear to the language involved. We are not saying that the dead person is passing judgment on something; we are saying that the we imagine that the person who is now dead would have preferred to have such a funeral had he been able to specify it in advance. Many people have definite preferences regarding how their funeral should be conducted when the time comes. The same goes for Boyer's brief question regarding feelings of guilt surrounding funerals which he thinks can best be explained by the same kind of "cognitive dissociation." I am not attuned to the feelings of guilt about funerals that Boyer thinks are so common. I can imagine any number of reasons why people attending a funeral might feel guilt, but none of them seem to me to warrant invoking contradictory inference systems.

Boyer's reference to a "contagion system" in connection with burial rituals makes more sense to me, but he says concerns about contagion do not fully explain burial rituals. The crucial thing for Boyer is the cognitive dissociation produced by different inference systems when confronting a dead person. In his argument it seems as though the term "dead person" is self-contradictory. This cognitive dissociation informs his explanation of grief:

> Why we feel grief at all is not really very well understood. However, we can make sense of some aspects of the feeling if we take into account our evolutionary history.

> The loss of a child, of caring parents or of grandparents who care for your offspring is an obvious genetic catastrophe. In seemingly coldhearted genetic calculations, losing a young child is a real disaster, but losing an infant is less damaging (because a lesser investment is wasted); losing a teenager is the worst possible situation (all investment is lost and a source of genetic transmission is gone); and losing an aged parent should be less traumatic. There is some evidence that the relative intensity of grief (always a difficult thing to measure, but large-scale comparisons allow some statistical inferences) does correspond to these predictions. But these are not the only people we lose. Because we are an intensely social species, and because we have lived in small groups for so long, the loss of any member of a group is a huge loss in terms of valuable information and potential cooperation.
>
> All these evolutionary considerations may illuminate why we grieve for some people rather than others, but they still do not explain why we should experience such intensely negative feelings in the first place. Biologists speculate that many negative emotions probably evolved to calibrate subsequent choices. For instance, that we bitterly regret having mistreated someone may provide the emotional urge better to accommodate other people in the future. But this should be irrelevant when we are faced by another's death, since the dead can no longer be partners in any actual social interaction. However, this last point may be precisely what is not entirely obvious to human minds. As I suggested, in the presence of a dead body some mental systems still function as if the person were still around. So we have no general explanation for grief; but we may better understand it if we realize that death is represented as a termination only by some parts of our mental systems. [RE-225]

A form of psychology that is unable to explain grief inspires as little confidence in me as an evolutionary theory of culture which cannot explain the Axial Age and the emergence of the three main religious traditions. Nonetheless suppose I grant Boyer his claim that dead bodies produce cognitive dissociation, what does that tell us about religious belief? In his theory our response to a dead body includes our predatory system which interprets the death of the person as the result of some form of predation, and this inference apparently leads to the inference that the predator may be an invisible agent. Also the dead body activates the person-file system which intuits that the person is still active even though the animacy system intuits he is dead. This leads us to believe that there is some way in which the dead live on and the conclude that our ancestors are still present in some way. I hope I am not doing justice to Boyer's thinking, but this is the best I can make of it.

I am not sure what I take away from reading Boyer other than bafflement and fatigue. He reduces the domain of religious thought to belief in supernatural entities or superhuman agents. He sees the origin of ritual in a practical desire to deal with (or forestall)

specific instances of hardship or misfortune. Cognitive psychology demonstrates that "combinations of limited counterintuitive materials and massive preservation of all other intuitive expectations are particularly salient and usually better recalled than other conceptual combinations." [MS-96] Common supernatural beliefs satisfy this criterion and this "explains" why supernatural beliefs are easily adopted. Beliefs that are more widely held are passed along in culture by being communicated to more young. At some point in the evolution of the species religious concepts become the concern of a guild of specialists (priests) like the craft guilds created by the division of labor. These specialists solidify their control by codifying beliefs into a creed which is imposed by sanctions of one sort or another as a means of enhancing social cohesion. The power of priests becomes entangled with political power and we get the history of Europe. Religious concepts (i.e. beliefs in supernatural agents) is of no value except for what it reveals to the scientist about how the mind works. I balk at almost every step along the way.

There is a passage in Boyer's most recent book which touches directly on the issue that led me to read him in the first place. He points out that the connection between religious beliefs and personal experience is a "recent invention" and cites William James's *The Varieties of Religious Experience* as the prime attempt to incorporate this connection into a scientific psychology. Needless to say the connection of belief to experience goes back at least to the Reformation if not to ancient mystery cults, but Boyer's point is that even James was unable to show clearly the connection between specific beliefs and specific experiences.

> As the scholar of religion Ann Taves argues, the comparative study of religions and modern cognitive psychology converge in suggesting that there is in fact no sui generis, specifically religious form of experience. However, all sorts of "special" mental events, which also occur in many nonreligious contexts, may provide potential anchors for beliefs about superhuman agency. How does that happen? Very few specialists of religion have explored the precise process by which we could associate beliefs in superhuman agents with mental episodes that we experience as somehow different from the ordinary flow of conscious mental activity. [MS-112]

First of all, what is a "non-religious context?" Surely an experience of salvation, conversion, union with the All or however the "special" mental event is characterized creates a "religious context." It does not have to take place in a church. Dropping acid or being on

the road to Damascus may not begin as a religious context, but it might nonetheless produce an experience with a religious dimension.

Boyer cites with admiration Tanya Luhrmann's anthropological study of the Vineyard Movement, an affiliation evangelical Christians, as a rare exception in the study of religion and emphasizes that one of the things that makes it so revealing is that the people involved believe that there can be moments when God speaks directly to individuals but they do not rely on the traditional methods for inducing altered states of consciousness.

> The evangelicals described by Luhrmann are trying to put themselves in a particular mental state, in which they could literally hear a superhuman agent. Evangelicals also make their own lives and their faith very difficult, however, by spurning all the cheap tricks and devices that people the world over have used, for millennia, to induce altered states of consciousness. They do not want to open their minds to the deity through the medium of drugs, starvation, meditation, hyperventilation, or the hypnotic repetition of mantras. Which is of course why the experience desired turns out to be so infrequent, ambiguous, and elusive.
>
> These people provide a description of the sought-after experience that is quite lucid and straightforward. This is exceptional. Most people who seek religious experience, or comment on it, are much less specific about the nature of the mental events concerned. But these inchoate experiences are still supposed to validate a specific doctrine or provide revelations that cannot be achieved by other means. [MS-113]

Even though Boyer acknowledges that the members of this movement engage in practices including prayer and deliberately creating moments of quietude, he says that they do not use the "cheap tricks and devices" commonly associated with the pursuit of altered states. What are prayer and meditation if not an attempt to put oneself in a mental state in which one can "hear God?" The reason I got involved in a discussion which led my friend to recommend Boyer's book was that I had just read Rudolf Steiner's *How To Know Higher Worlds*. Steiner describes a practice of meditation which can involve recitation of mantras. He describes the various stages of initiation, and a superficial reading of his description of the perception of auras and the presence of spiritual beings can easily be classified as the extreme form of airy nonsense that Boyer wants to analyze. But anyone who reads Steiner with an open mind will find exactly what Boyer is looking for in his wish that more "specialists of religion" would explore "the precise process by which we could associate beliefs in superhuman agents with mental episodes that we experience as somehow different from the ordinary flow of conscious mental activity."

Boyer rejects the idea that any form of introspection can yield "scientific" insights into the functioning of the mind or brain, but surely someone who can have lucid dreams (i.e. who can remain fully self-conscious while dreaming) may have something to tell us about how the mind or brain works. Steiner mentions lucid dreaming as one of the steps in the gradual initiation process, and lucid dreams are not a fantasy. Allan Hobson, a professor of psychiatry at Harvard, in his book *Consciousness* cited the fact that subjects could be trained to have lucid dreams and monitored electronically while they do as one of the promising areas of research in neuroscience. [C-22]

The altered state that Steiner achieved in his meditation is one which accesses levels of awareness in which there is no longer a clear dichotomy between subject and object, a state that seems to be described in all kinds of mystical or religious or philosophical accounts of enlightenment. All these accounts seem to agree on the inadequacy of normal language to capture or express the nature of the experience, and Steiner found it necessary to develop his own form of mythological thought to express his insights. The wonderful thing about Steiner is that he does not end up with some cult where his followers forsake all to be a groupie nor does he provide rituals designed to enhance an individual's power or free him from the constraints of morality. He is as clear as any Zen monk that everyday life is real and that nothing in the process of initiation into "higher worlds" should distract the devotee from continuing to perform his normal duties in his work or family life. I do get the impression that his recommended path of meditation is a rigorous and demanding one which may take years for the ordinary person and may not be possible for everyone. He does say that there are different paths that might be pursued, but the end result is a realization that the creative force driving evolution is a form of what we call love. Instead of achieving a nirvana of bliss where one is content to do nothing, the final stage of initiation results in a desire to help others. It is in fact what the Bodhisattva ideal is all about.

Explaining why people so easily believe things that are patently untrue or even self-contradictory is a different task from evaluating whether religious traditions have something to offer contemporary society. Boyer's cognitive psychology offers a model of a highly compartmentalized mind that may make it easier to imagine how we can cling to inherited beliefs which we also regard as nonsense in other contexts or how we can choose to believe "facts" that are presented as being connected with social policies we feel are important, but

it seems relatively limited to me. I do believe that there is some kind of evolutionary dialectic at work in culture and history, but I think it operates at some "level" above genetic encoding. Natural selection does not satisfy me as an explanation of cultural evolution. Cultural traditions or beliefs are not inherited via genes, and they clearly may be counter-adaptive to the point of being suicidal for the species. Boyer's explanation of the persistence of religious beliefs is the demonstration by cognitive psychological experiments that ideas that activate many inference systems to produce expected results while also activating one system that produces an unexpected result are easily retained. To him the fact that an idea is easily recalled implies that it will spread and be widely retained. I do not understand how this implies that the idea will be accepted to the point of being the basis for action. Vast numbers of people may love and remember the magic of Harry Potter, but I assume a relatively small percentage of them actually try to practice it.

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