

# **Review of Religion Explained-- The Evolutionary Origins of Religious Thought by Pascal Boyer (2002) (review revised 2019)**

**Michael Starks**

## **ABSTRACT**

You can get a quick summary of this book on p 135 or 326. If you are not up to speed on evolutionary psychology, you should first read one of the numerous recent texts with this term in the title. One of the best is "The Handbook of Evolutionary Psychology" 2<sup>nd</sup> ed by Buss. Until about 15 years ago, 'explanations' of behavior have not really been explanations of mental processes at all, but rather vague and largely useless descriptions of what people did and what they said, with no insight into why. We might say that people gather to commemorate an event, praise god, receive his (or her or their) blessings, etc., but none of this describes the relevant mental processes, so we might say they are explanations in much the same way that it explains why an apple drops to the ground if we say its because we released it, and it's heavy-there is no mechanism and no explanatory or predictive power. This book continues the elucidation of the genetic basis of human behavior which has been almost universally ignored and denied by academia, religion, politics and the public (see Pinker's excellent book "The Blank Slate"). His statement (p3) that it is meaningless to ask if religion is genetic is mistaken as the percentage of variation of any behavior due to genes and environment can be studied, just as they are for all other behaviors (see e.g., Pinker). The title should be "Preliminary Attempts to Explain Some Aspects of Primitive Religion", since he does not treat higher consciousness at all (e.g., satori, enlightenment etc.) which are by far the most interesting phenomena and the only part of religion of personal interest to intelligent, educated people in the 21st century. Reading this entire book, you would never guess such things exist. Likewise, for the immense field of drugs and religion. It lacks a framework for rationality and does not mention the dual systems of thought view which is now so productive. For this I suggest my own recent papers. Nevertheless, the book has much of interest, and in spite of being dated is still worth reading.

Those wishing a comprehensive up to date framework for human behavior from the modern two systems view may consult my book 'The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle' 2nd ed (2019). Those interested in more of my writings may see 'Talking

Monkeys--Philosophy, Psychology, Science, Religion and Politics on a Doomed Planet--Articles and Reviews 2006-2019 3rd ed (2019) and Suicidal Utopian Delusions in the 21<sup>st</sup> Century 4<sup>th</sup> ed (2019).

“God is dead and man is free” Nietzsche

“This very body the Buddha, this very earth the lotus paradise” Osho

“I can well imagine a religion in which there are no doctrines, so that nothing is spoken. Clearly, then, the essence of religion can have nothing to do with what is sayable” Wittgenstein

When this book appeared, it was a pioneering effort, but now there are endless discussions of this topic and so I will give a sufficiently detailed and accurate summary that only specialists will need to read it. You can get a quick summary of this book on p 135 or 326. If you are not up to speed on evolutionary psychology you should first read one of the numerous recent texts with this term in the title. The best are “The Handbook of Evolutionary Psychology” 2<sup>nd</sup> ed (2015) and The 5<sup>th</sup> ed. of Evolutionary Psychology by Buss, readily available free on the net.

Until about 15 years ago, ‘explanations’ of behavior have not really been explanations of mental processes at all, but rather vague and largely useless descriptions of what people did and what they said, with no insight into why. We might say that people gather to commemorate an event, praise god, receive their blessings, etc., but none of this describes the relevant mental processes, so we might say they are explanations in much the same way that it explains why an apple drops to the ground if we say it’s because we released it and it’s heavy--there is no mechanism and no explanatory or predictive power.

This book continues the elucidation of the genetic basis of human behavior which has been almost universally ignored and denied by academia, religion, politics and the public (see Pinker’s excellent book “The Blank Slate”). His statement (p3) that it is meaningless to ask if religion is genetic is mistaken as the percentage of variation in any behavior due to genes and environment can be studied, just as they are for all other behaviors (see e.g., Pinker).

The title should be “Preliminary Attempts to Explain Some Aspects of Primitive

Religion'' since he does not treat higher consciousness at all (e.g., satori, enlightenment etc.) which are by far the most interesting phenomena and the only part of religion of personal interest to intelligent, educated people in the 21st century. Reading this entire book, you would never guess such things exist. Likewise, for the immense field of drugs and religion. How and why do entheogens trigger the inference engines and what role have they played in religion and life for the last million years? There is a huge mine of info on drugs and behavioral templates, but you won't find even a clue here. You can start with the recent books ''Entheogens and the Future of Religion'' and ''Buddhism and Psychedelics'' or you can read my friend Alexander Shulgin's amazing probing of the 'cognitive templates in PHIKAL and TIKAL, available, as almost everything now, free on the net. One of the most unusual of the drug probes is ketamine, described by many, most notably in "Journeys into the Bright World" by Altounian and Moore, Jansen in "Ketamine" and in probably the most detailed account of a single entheogenic drug by a single user in the last two chapters of John Lilly's ''The Scientist''. Lilly, almost single handedly the founder of dolphin research, was a generation or more ahead of nearly everyone on many topics and he also probed his own mind with LSD and isolation tanks. See his 'Simulations of God' (1975 and my review of it) for his speculations on Mind, God and Brain and more aspects of the spiritual and mental not touched upon by Boyer. Also for recent heroic self therapy with entheogens see '[Xenolinguistics](#)' by Slattery and 'DMT & My Occult Mind' by Khan.

There is also virtually nothing here about the relation between physical and mental states. The practice of the many forms of yoga was highly advanced thousands of years ago. Its primary aim was to trigger spiritual states with body energy and the reverse. There is an immense literature and hundreds of millions have practiced it. The best personal account I know of by a mystic detailing the interaction of the mental and physical via yoga is found in 'The Knee of Listening' by Adi Da (see my review). Interwoven with the spellbinding account of his spiritual progress are the details of his work with the shakti energy of yoga (e.g., p95-9, 214-21, 249,281-3, 439-40 of the 1995 edition--preferable to the later ones). These few pages are worth more than a whole shelf of yoga books if you want to get to the heart of the mind/body relation in spirituality.

Zen and other practices probe the brain's templates with meditation and tricks. Boyer does not understand that the major religions (and countless minor ones) were started by persons who broke the mold—i.e., somehow blocked or evaded some templates to destroy much of the ego and to discover aspects of their mind normally hidden. It is not hard to see why full blown enlightenment is rare, as those who have it stop behaving like monkeys (i.e., fighting, deceiving, reproducing,

accumulating) and this would be heavily selected against. One might say those who achieved it are the only ones who became fully human (i.e., Jesus, Adi Da, Mohammed, Buddha, Mahavira, Rumi, Osho and 1000 or so others we know of). It seems Boyer has no personal experience with meditation, entheogens and higher consciousness (e.g., see pages 317, 320-324) so he clearly does not treat all of religion. This is again evident (p32) when he says religion has no origin or clear explanation which is curious as he provides exactly this. Of course, this is true in a sense of the primitive religions he discusses, but Buddhism, Christianity, Islam, etc., have very clear origins and explanations in the enlightenment of Jesus, Buddha, Mohammed etc. He is mistaken (p308) in his belief that Eastern religion is mostly about ritual, rather than personal experience and inner states and that it got such ideas from Western philosophy (3000 years ago!).

Amazingly, he rejects William James's notion that religion is a result of the experiences of exceptional individuals that are subsequently degraded by the masses (p310). James is clearly right and Boyer is again, only thinking of primitive religion. Perhaps the best personal account of the various states of samadhi, enlightenment, etc. is Adi Da's book--`The Knee of Listening` but by far the best source for personal accounts by an enlightened master are the numerous books, audios and videos by Osho, all free on the net.

Witnessing one's thoughts is one of the commonest techniques of beginning meditators in many different traditions. Further progress fuses the perceiver and perceived (all is one). One wonders how this relates to the templates—do they enter consciousness, does spiritual change open new neural connections or close some? Cognitive psychology has barely started on this, but it would be interesting to see PET or fMRI on an enlightened person or one in a samadhi state with good controls and has been done. Though he is right that many experiences are of some agent, advanced states have been described in a vast literature which shows they typically have no thoughts, no mind, no person, no god. This would seem to be the ultimate in decoupling System 2 templates in a functional person.

For supernatural types of religious concepts to evolve and survive, they should belong to one of the basic ontological categories or templates (plant, tool, natural object, animal, person etc.) which the brain uses to organize perception and thought. These are commonly given counterintuitive properties such as prescience, telepathy, immortality, ability to hear one's words or read one's thoughts, ability to heal or confer great power etc. Good supernatural concepts usually allow all inferences not specifically barred by the violation of intuition—i.e., a god will have all human properties but does not age or die. The huge number of religious concepts

is contained in this short list of templates. It is the counterintuitive nature of the concepts that makes them easy to remember and to transmit to others and this seems to be one reason why supernatural concepts are a central part of nearly all religions. Supernatural concepts interact with other types of templates such as intuitive psychology, intuitive physics, structure function and goal detection. If it activates physics, goal detection, intuitive psychology and intentional use, then it will be a human-like being with superhuman properties. This is standard cognitive psychology and counterintuitive parts are added on for religious use. There is abundant evidence that brain areas that are activated when we do something are also activated when we see someone else doing a similar thing (mirror neurons). It is feasible that this is correlated with the need to join in and the satisfaction from participating in the rituals integral to society (sports, politics, music etc.) and religion.

There is also evidence that seeing other people's emotions activates the same areas as our own. Our theory of mind (i.e., of other people's mental life-- intuitive psychology which I prefer to call Understanding of Agency -UA) seems not to be one inference engine, but the sum of many and, as more research is done, more modules will be discovered. Another critical feature of inference engines is that they often run in decoupled (counterfactual or imaginary) mode while we consider the past or the future. This starts quite early as shown by the common presence of imaginary playmates in children, their ability to grasp stories and TV, and he notes that research seems to show that children who create playmates seem to be better at grasping other people's mental states and emotions. The point in this context is that it seems quite natural to ascribe humanlike characteristics to spirits, ghosts, gods, etc. when there is no evidence at all for their actual presence.

The innate inference engines are automatic as they have to be fast and not distract us (i.e., they are System 1 but sadly he fails to use the two systems framework here — see my papers for this). The mind was not evolved as an explanation machine and before the recent rise of science, nobody ever tried to explain why our foot moves when we walk, an apple falls to the ground, we get hungry or angry or why we experience or do anything. Only bizarre or cosmic occurrences like lightning or sunrise needed a cause. Our intuitive psychology and agency templates also prompted us to ascribe good and bad luck to some agent. Much of this may sound speculative but now that EP (evolutionary psychology) is a major paradigm, the evidence of such innate S1 functions in early childhood and infancy is mounting rapidly.

Supernatural agents (including deceased ancestors) are treated by intuitive

psychology as intentional agents, by the social exchange system (a part of or variant on the cost/benefit systems) by the moral system as witnesses to moral actions, and by the person-file system as individuals. Since all these systems can operate in decoupled mode, there is no need to consider whether these agents really exist. They are driven by relevance, by the richness of inferences that result and by the ease with which they can be remembered and communicated. The templates are highly tuned to gather info, get cooperation and calculate benefits in a very rapid, subconscious and normally error-free way, while conscious reason is slow and fallible. In modern times, the ego has time to waste on debate, explanation, and interpretation in endless attempts to deceive and manipulate others for personal gain. With large, mobile populations and fast communication the results of our social exchange, evaluation of trust, cheater detection and other templates are often useless and self-destructive. Strategic info (that which passes the relevance filters) activates the engines related to social interaction and our knowledge of what info others have is a critical part of the social mind. The supernatural agents typically have perfect knowledge. Though he does not seem to mention it, powerful people often come to have some of the characteristics of supernatural agents and so people will start to respond to them as to gods. Aliens, UFO's, new age mysticism, astrology, fantasy and sci-fi draw great attention due to activation, and often possess agents with strategic info. However, hundreds of millions have followed charismatic leaders with false strategic info (i.e., quasi-supernatural agents) to their deaths (The Branch Davidians of Waco, Communism, Nazism, Vietnam, Jonestown, George Bush, Comet Kahoutek etc.).

Social interactions require a social mind—i.e., mental systems that organize them. Like most behavior, it is only recently that it was generally realized that we needed built-in mechanisms to do this. Strategic information is whatever activates the social mind. Our theory of mind (UA) tells us to what agents this info is also available. It is common to attribute to supernatural agents the ability to fully access info that would normally be partly or totally unavailable to others.

All the engines must have some kind of relevance filter so that they are not constantly activated by trivia. We have taxonomies that tell us how to group things in ways relevant to their behavior or properties in the world now called System 1 (S1), and we then use our more recently evolved slow deliberate linguistic System 2 (S2) when there is time. We expect large catlike things with big teeth and claws to be predators and not herbivores. Spirits fit human taxonomy and automatically have needs and desires, likes and dislikes and will thus give rewards and punishments and all any culture has to do is specify what these are. Those concepts giving the richest inferences with the least effort have been selected into S1.

A common viewpoint is given by relevance theory, which tries to determine how and why some 'concepts' (i.e., the language games of System 2) are more easily transmitted. Presumably, concepts which trigger engines (S1 'concepts') more intensely or frequently, or more different engines, will be superior. So, we may have many language games that are easier to remember and apply, rather than because they make sense or are more useful in some way than others. This may help to explain the existence of many concepts or practices that seem arbitrary or stupid, or which make life more difficult and applies to all of culture, not just to religion.

Nearly all religions have full access agents—i.e., they know all or nearly all about us and Boyer distinguishes 3 classes--divine brutes with little or no access but which nevertheless have power, Aquinas agents which know everything and full strategic agents which have access to all the strategic or important info. He says that this may account for our interest in knowing other person's religious ideas or in converting them to ours. Only in this way can we understand how they may behave and interact.

Agents that are aware of and able to affect our social interaction are richer in inferences, and so are easier to mentally represent and remember and thus enjoy a great advantage in cultural transmission. Thus, we can now say that religion does not create or even support morality, but that our built in moral intuitions (i.e., the fast automatic prelinguistic mental reflexes of S1) make religion plausible and useful. Likewise, our mechanisms to explain good and bad luck makes their connection with supernatural agents simple. And since we share our moral system and our information with them, it is natural to expect they will enforce our attitudes.

Reciprocal altruism and cheating are central parts of human behavior. To show passionate feelings and honesty that are genuine (difficult to fake) is of great social (and genetic) value. This can be reinforced by religion as one would choose to cooperate with such persons rather than with rational calculators who may change their mind or cheat anytime their inference engines calculate that it is in their best interests. This system also requires that cheaters be punished, even when the cheating has minimal social cost. One common group of religious concepts are those that make cheating immoral. The mechanism is feelings (e.g., the rapid S1 reflexes of anger, jealousy, resentment, confusion) rather than the slow rational cogitation of S2. This may sound strange but it has been shown not only in monkeys but in lower animals. Yes there are endless elaborations of cheating in modern society but like all our behavior it is built on genetics and S1..We feel that it is wrong for someone to steal another's money rather than needing to sit down and think--well

if he takes that money, then maybe he will take mine or he will have some future advantage over me etc. Perhaps here is one place that guilt enters in order to make the socially (genetically) destructive practice of cheating less appealing. This takes us into the huge literature on cheaters and cooperators, hawks and doves and pretenders and into reciprocal altruism and game theory. Keep in mind that 'true altruism' or group selection is clearly a fantasy as I have detailed in my review of Wilson's 'The Social Conquest of Earth'. So, like all behavior, religion evolved because it had survival value for individuals.

Many types of commitment gadgets have evolved which tend to ensure cooperation--keeping track of reputation, legal or quasi-legal binds (contracts), strong passions, compulsive honesty, resentment and need to punish cheaters. Cooperation gadgets are built in also--moral intuitions, guilt, pride, gratefulness, hostility. In contrast to the nearly universal idea that moral realism (that behavior itself has a specific moral value that does not depend on one's viewpoint) is only developed by adults or is given by religion, it is now clear that this appears in 3 and 4 year olds and changes little with age. Methods have now been developed to study infants and in late 2007 a study appeared in Nature which showed that they can distinguish helper from non- helper objects and there has been lots of work on humans and other animals since. Of course, intuitive morality will often give the wrong results for adults in the modern world, as may all of our S1 reflexes in many contexts.

Most of the basics of what has formerly been regarded as culture, is now known or suspected to be inherited. Pinker lists hundreds of different aspects of human societies that are universal and thus good candidates. One can compile a very long list of religious concepts that we don't need to be taught---spirits understand human thoughts, emotions and intentions and differentiate between wishes or images and reality etc.

It seems that the only feature of humans that is always projected onto gods, spirits, ghosts, etc, is a mind much like our own. Intuitive psychology applies to intentional agents in general (i.e., persons, animals and anything that appears to move in pursuit of its own goals). Intuitive physics is probably also composed of many subsegments and must be connected with the intentionality module --e.g., when a lion is chasing an antelope, we know that if it changes course, the lion will probably do so. One would expect that detecting such agents was a very ancient evolutionary priority and even 500 million years ago a trilobite that lacked such genes would soon be lunch. As more behavioral genes are mapped we are finding the same or similar ones in fruitflies, just as we have for other genes such as the ones controlling



body segmentation and immunity, and great strides in this direction have been made since this book appeared. Just search *Drosophila* behavior.

Like our other concepts, religious ones are often vague and their use idiosyncratic due to the fact that they result from the unconscious functioning of inference engines (S1) as elaborated upon by the vagaries of culture. We cannot say precisely even what simple words mean, but we know how to use them. Just as Chomsky discovered depth grammar, one might say that Wittgenstein discovered depth semantics.

Wittgenstein was the first (and still one of the few) who understood that what philosophy—which I term the descriptive psychology of higher order thought- (and all attempts to understand behavior) was struggling with was first and foremost these built-in S1 functions that are inaccessible to conscious thought. Though I have never seen it stated, it seems reasonable to regard him as a pioneer in cognitive and evolutionary psychology.

Boyer takes a new view of death also. Corpses have properties that make supernatural concepts relevant apart from our need for comfort and this part of religion may be less about death than about dead bodies. They produce a dissociation between the animacy, intuitive psychology and person 'file systems'. We see such dissociation in autism and odd neurological states such as Capgras syndrome.

He sees this as another way that culture makes use of salient gadgets (events, objects etc.) which are highly relevant and grab the attention of the inference engines. And since this book appeared, evidence continues to accumulate that genes create culture to a much greater extent than most people (including scholars) ever imagined. It has its own field—implicit cognition.

Nobody ever thinks to inquire as to the motives if a rock that falls and hits us, but we always do if it comes from the hand of a person. Even a very young child knows this, due to its intuitive psychology, agency, animism and other engines. These engines (genes, reflexive behaviors) must, in their original forms, be hundreds of millions of years old. A carboniferous era dragonfly differentiated between animate and inanimate objects and calculated the trajectory of its prey.

Religion originally worked in an atmosphere of perpetual fear. Inference engines evolved to find mates and food and shelter and avoid death, hence the approach to the gods as a powerless supplicant and the use of appeasement rituals and offerings

(as we would to a person). Our danger avoidance is highly imperfect in the modern world due to guns, drugs and fast transport (cars, skis). Everywhere in the world you can see people walking or riding bicycles in the streets just a step away from speeding vehicles, even though at least a million a year are run down.

He says (p40) that memes (Dawkins famous cultural analog of the gene) are not a very good concept for cultural transmission since ideas are changed by each person, while genes remain the same. However, what about media—i.e., film, TV, print, email? They can replicate more precisely than genes. These are now the prime means for transmitting and checking the validity of memes, not just what someone says. In any case, genes are not perfect either. Just as there is a phenotype corresponding to the genotype, there is a phene corresponding to the meme.

Why do we invoke supernatural agents for good and bad luck? They activate our social exchange systems and since we regard them as having strategic info they can control what happens.

It occurs to me that perhaps there is such great opposition to genetic explanations for behavior because people feel anyone who accepts this will automatically reject the social exchange and other templates and will always cheat. Or perhaps they fear the intuitive psychology will no longer work. And it calls their attention to The Phenomenological Illusion (the illusory feeling we have that our behavior is due to conscious decisions- see my other writings).

Social rituals are examples of what psychologists have termed precautionary rules and these commonly include concerns about pollution, purification rituals (activation of the contagion system), contact avoidance, special types of touching, special attention to boundaries and thresholds, rule violations, use of certain numbers of bright colors, symmetrical arrays and precise patterns, special sounds or music, special dance and other movements, etc. All these trigger certain groups of templates, create satisfying feelings, and are commonly coupled to religious concepts, and to politics, sports, hunting and agriculture, marriage, child rearing, music, art, folklore, literature etc.

The agency detecting systems (e.g., predator and prey detection) are biased for over-detection—i.e., they do not need to see a lion or a person to be activated, but only a footprint or a sound of the right kind. Based on very little info, these systems then produce feelings and expectations about the agents' nature and intentions. In the case of supernatural agencies our intuitive psychology templates are also activated and generally produce a person-like entity plus the counterintuitive

features, but their precise characteristics are generally left vague.

The attaching of a counterintuitive tag (e.g., rising from the dead) to an agent (e.g., Jesus) or other ontological category makes it easy to remember and a good candidate for religion.

All these modules are inherited but of course a baby does not have them fully developed and only with time and a `normal` environment will they emerge.

I read this shortly before reading Ken Wilber's "Sex, Ecology and Spirituality" and could see on nearly every page how outdated and empty are most of the works which Wilber is discussing. A large part of Wilbur's book and of the hundreds he analyzes on religion, psychology and philosophy are now archaic. However, Wilbur has written many books of great interest on spirituality and it is sad that Boyer does not even reference him-- but neither does he reference drugs, Wittgenstein, meditation, yoga, satori or enlightenment in his index!

One might say that the Nobel peace prize is given to those who are best at encouraging us to extend coalitions to include other outgroups or even other countries or the whole world. Or, one might say they get the prize for efforts to turn off the `cheater detector` or social exchange templates which require that only those who reciprocate are included in one's group and given access to resources (which most of the world's poor clearly cannot do).

He gives a brief summary of some of the self-deceptive inferences which play a role in religion as in all of life--consensus, false consensus, generation effect, memory illusions, source monitoring defects, confirmation bias and cognitive dissonance. Like the other templates, these gave very good results 100,000 years ago, but with life in the fast lane, they can now prove fatal for individuals and for the world. Coalitional intuitions and essence concepts are delineated as critical parts of human behavior. Humans automatically form groups and show hostility to persons not in the group and wholly undeserved friendship to those in the group (coalitional intuitions), even when the group is composed of total strangers. This relates to operation engines such as cost/benefit and calculation of reliability mentioned before. Essences are the concepts we use to describe our feelings (intuitions) about coalitions and other social categories (e.g., hierarchies and dominance). Although these mechanisms evolved in small groups, nowadays these are commonly operating with people to whom we are not closely related, so they often give false results. Stereotyping, racism and its accompaniments (i.e., arbitrary (or not so arbitrary) set distinctions) are probably the results of the operation of coalitional

intuitions built into our brains, rather than stereotyping being an S2 psychological function and the coalitions with their exclusion, dominance, and antipathy being the results. These engines may well explain the `social magic` that forms and guides societies.

He suggests that one might explain fundamentalism as a natural reaction to the common violation of coalitional thinking in modern societies. Freedom to act as one chooses and in direct opposition to others in the same community creates strong and often violent feelings in those without the education or experience to deal with diversity and change. They often want public and spectacular punishment to assuage their feelings. Fundamentalism may best be explained as attempts to preserve hierarchies based on coalitions, when these are threatened by easy defection or inattention. These are functioning in all people all the time, but they come to the surface mainly when there is a situation that creates some special threat (i.e., modern life). Of course, as always, we need to keep in mind that the ultimate source and payoff for all behavior is in the genes.

Though he says little about it, the notions of ontological S1 categories and counterintuitive tags that `stick` to them also go far to explain magic, the paranormal, folklore, mythology, folk medicine, astrology, theology, miracle workers, demonic and angelic possession, the arts, and formerly even much of science. Rituals act as snares for thought. Our contagion templates are powerful activators of behavior and it is natural to include many purification rituals in religion. They also make use of our planning systems, which we can see in extreme form in obsessive compulsive disorder. There is preoccupation with colors, spaces, boundaries, movements and contact. Salient gadgets are incorporated. We have a powerful need to imitate others.

Rituals activate our undetected hazard systems. Sacrificial offerings to the unseen agents make use of our social exchange systems. Our coalitional intuitions are satisfied by group rites and marriage. The `naive sociology` of the common man extends into much philosophy, sociology, theology, anthropology, psychology, economics, politics and is the result of our attempts to make sense of our own behavior but this is the result of the automatic and unconscious functioning of our templates. Thus, much of culture seems magical-- hence the term `social magic`. Inevitably, naive sociology is weak, so rituals and belief systems emphasize the benefits of cooperation and the costs of cheating or defection. The rituals and gadgets stimulate memory and satisfy the contagion system. Participation signals cooperation and the gods and spirits are optional. So, templates lead to religion which leads to doctrines and not the reverse.

I think he goes seriously astray when discussing science vs. religion (p320). He says it is wrong to talk about religion as a real object in the world (whatever that might be), but of course the external and internal (mental) phenomena can be studied as well as any other, and he shows in this book that religion is a branch of cognitive psychology. He says there is no science as such, and we know that he means it's complex, but then there is no religion, law, sports, auto racing or anything at all, as such. He objects to 'pop theology' which says religion makes the world more beautiful or meaningful or that it addresses ultimate questions, but all religion addresses the ultimate questions and tries to make the world meaningful and less ugly. In addition, what I call 'advanced religion' --i.e., the way it starts in the no-minds of Jesus, Buddha, Osho etc.-- has a quite different take on the world than the primitive religion he discusses in this book (e.g., see the 200 books and DVD's of Osho at Oshoworld.com or on p2p etc., or see Wilber, Adi Da etc.). Again, on p 327 he thinks there is no religious center in the brain and though this is probably true for primitive religion, it seems more likely that there are centers (networks of connections) for the experiences of satori and enlightenment and maybe for entheogens too. He also thinks (p321) that science is less natural and more difficult than religion, but in view of the huge number of scientists and the facts that nearly everyone is able to absorb science in grade school, and that there have probably been less than 1000 enlightened persons in all of human history, it seems clear that the situation is quite the reverse for advanced spirituality. It is vastly less difficult to become a botanist or a chemist than to dissolve one's ego! Natural selection will clearly eliminate higher consciousness genes, but the rational calculus of science is quite consistent with gathering resources and producing children. Of course, the problem is that he is again fixated on primitive religion.

He sums it up by saying (p 135) that religious activities activate inference systems that 'govern our most intense emotions, shape our interaction with other people, give us moral feelings and organize social groups'. Of course, these have nothing to do with satori or enlightenment! He notes that religious ideas are parasitic upon our intuitive ontology (i.e., they are relevant). They are transmitted successfully due to mental capacities that evolution has already created. As with other behaviors, religion is a result of aggregate relevance--i.e., the sum of the operation of all the inference engines. Thus, religious concepts and behavior are present not because they are necessary or even useful, but because they easily activate our templates, are easy to remember and transmit, and so they survive over time. He gives a final summary (p326) of "The Full History of all Religion (ever)" as follows (of course it leaves out 'advanced religion (spirituality, mysticism)'). Among the millions of things people discussed were some which violated our intuitions and this made

them easier to remember and transmit. Those that were about agents were especially salient as they activated rich domains of possible inferences such as those about predators and intuitive psychology. Agents with counterintuitive properties, especially ability to understand and affect human behavior or the world were strongly transmitted. They became connected with other strange and somewhat counterintuitive events such as death and feelings about the continued presence of the dead. Somehow rituals arise and become associated with the powerful supernatural agents. Some persons will be more skilled at conducting such rituals and guiding the interactions with the spirits. Inevitably they will create more abstract versions and start to acquire power and wealth. However, people will continue to have their own inferences about religion.

He notes that religion owes much to the probably recent (in hominoid evolution) appearance of the decoupling ability and it occurs to me that one might regard entheogenic drug experiences, satori and enlightenment as the ultimate in decoupling--no past, no future, and not even a present-- no here, no there, no me, no you and all is one thing and illusory. The other key transition in evolution is posited to be the ability to accept the violation of intuitive expectations at the level of ontological domains (i.e., the classes of things--plants, people, moving things etc.). He regards these capacities as leading to the invention of religion (and of course much else) but it's clear that Buddha, Jesus and Osho went quite a bit further. He rejects the idea that religious thoughts made minds more flexible and open (rather they became susceptible to certain concepts that activated the inferences of agency, predation, morality, social exchange, death etc.), but something made us susceptible also to the entheogens, satori and enlightenment and this is as flexible and open as people can be and remain sane. So it is clear that much remains to be discovered about spirituality and religion and the progress in understanding behavior will bring this about.