

The Basis for Systems of Belief

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“Why are we so gullible? Why is it so difficult to discriminate between what is real and what is bogus? The answer can be found in understanding the power of belief systems that drive, and as often as not distort, our perceptions of reality.”

Michael Shermer

What I want to talk about here are beliefs and concepts. Specifically, I want to talk about what we often term *religious concepts* and the *belief systems* that stem therefrom. First we have to realize that a *concept* can be thought of as a general idea derived or inferred from specific instances or occurrences. We can also refer to a concept as something that is formed in the mind, such as in the guise of a thought or notion. We can define *belief* as the mental acceptance of and conviction in the truth, actuality, or validity of something. Concepts are a product of the human mind. Those concepts can form the basis of our belief systems. We have to understand, to a certain degree, how the brain and mind work together to gather information from the external world and then process that information. Obviously the brain perceives actual events in the world (or, rather, gets information that is “perceived” by the sensory organs) and the mind processes that information and interprets it and then forms beliefs on the basis of those perceptions. In general, all beliefs that human beings have come from the external world *as it is perceived* through the senses. (I suppose we can make exception for those who claim to have inner visions.)

At its core, a concept is a mental abstraction which allows generalization and the extension of knowledge from some known objects or events to others that are unknown. A concept integrates two or more particulars into a common mental unit. Consider that the world is full of innumerable entities. Without the ability to generalize, and forced to approach the world as if every entity were entirely unique and different, humans would probably waste all of their time learning and grasping fundamental concepts over and over again. A concept is formed by taking a number of similar entities and deciding what makes them similar in some important or relevant way. The differences and the unessential similarities are not as important and are abstracted away from the newly created mental entity. While concepts integrate particulars, concepts can also act as particulars. In this way, it is possible to form higher levels of abstraction, combining concepts into more complex concepts, and furthering one’s understanding and knowledge by increasing the amount that can be integrated. Higher-level concepts can also allow more complicated combinations that are not possible by just trying to integrate lower-level particulars.

Templates, Concepts, and Dispositions

The human brain developed according to natural selection, which gave human beings (in the form of the mind) certain predispositions to types of mental activity. This mental activity is, in large part, geared to gathering information about the environment and selectively filtering that which is most relevant for survival. Since the mind is prepared to gather and process information from the environment (i.e., learn), it is also prepared to

handle variations on that information since the environment itself is potentially variable. What this means is that if we want to understand how concepts are understood and utilized by human beings, we have to understand how the brain receives information and how the mind organizes and interprets it. As I said, the mind is prepared to identify information that is deemed relevant. The brain can receive a lot, but the mind filters. This filtering process, however, is not random. It is based on predispositions and those predispositions, in general form, are the same from human to human because they are the result of evolutionary development. Then experience and culture allows variations on the results of those predispositions. That is why the mind is able to handle variations, as mentioned above. Regarding our dispositions, we have to realize that while we have dispositions for certain concepts or certain ways of looking at the world and gathering information, if we are not given opportunities to use these skills or to acquire certain concepts, then we most assuredly will not do so. This is particularly true in the case of various concepts. While we have the capacity to acquire these concepts, based on the way our minds have evolved in tandem with the workings of our brains, there is no guarantee that such concepts will necessarily be entertained. Pascal Boyer gives a good example of this:

“All human beings can catch colds and remember different melodies. We can catch colds because we have respiratory organs and these provide a hospitable site for all sorts of pathogens, including those of the common cold. We can remember tunes because a part of our brain can easily store a series of sounds with their relative pitch and duration. There are no common colds in our genes and no melodies either. What is in the genes is a tremendously complex set of chemical recipes for the building of normal organisms with respiratory organs and a complex set of connections between brain areas. Normal genes in a normal milieu will give you a pair of lungs and an organized auditory cortex, and with these the dispositions to acquire both colds and tunes.”

If we have a disposition to learn, and it seems that all normal brains do, then it seems we have a disposition to go *beyond* the information that is available. That “going beyond” means that minds that acquire knowledge tend to have some way of organizing information to make sense of what is observed and learned and to draw conclusions from that; in other words, the mind has a capacity to generalize, to go beyond the information given, to produce *inferences* on the basis of the information that is given. It is inferences, particularly when they become somewhat complex, that allows the mind to build concepts out of fragmentary information. The inference (or generalization) process is governed by special principles in the mind and those special principles are the *mental dispositions* that minds have for arranging conceptual material in certain ways rather than in others. It seems that our minds create concepts based, at least in part, on *templates*. The generalizations that the mind makes are based on the template. When a concept fits a template, the attributes of that template are applied to all instances of that concept.

Templates are more abstract than concepts and because of that templates serve to help organize concepts. This means templates will tend to be very stable while concepts will

tend to depend on one's particular experiences and the environment in which those experiences took place. Templates are one of the devices that allow minds to reach similar representations of information without having a perfect channel of transmission to get information from one mind to another. What this means is that people will tend to converge on similar inferences because we are all operating off of similar or even identical templates (at least to some degree of approximation). What this means practically is that while any given mind is capable of producing a myriad of concepts from information and making myriad changes to those concepts, it is the case that *some* changes and inferences will tend to go in particular directions. Human minds build inferences in such a way that concepts within a group can be very similar and the concepts of different, widely separated, groups, despite differences, can be shaped by the same templates and thus mark a similar degree of convergence. That is why patterns of behavior or belief systems can be very similar, even between widely separated cultures.

This gets into the interesting notion of how concepts at the individual level seem to become what we call "cultural" via some process of transmission from individual to individual. First we have to realize that the term "cultural" labels a certain similarity between the representations we find in members of a given group or, to put it another way, it is the similarity between some people's mental representations in some domains. We have to realize, however, that within these groups information and representations undergo a process of mutation, re-sequencing, re-combination, and selection not just during the process of transmission from one mind to another but also within the *individual mind* of any given person that entertains the representation. This is because of the processing that the mind does on the information (mentioned above) based on deriving concepts from templates. (By many arguments, if you find a particular concept is stable in a human group in the sense that you can come back later and find it more or less unchanged, this is because the concept had and has a particular *advantage* inside individual minds. This idea of "stability" within the human mind and within groups might better be worded as "relevance" because the human mind is prepared to identify relevant information in a given environment.) What this amounts to is that to explain any overall concept or belief-system within a given culture, we have to realize we are looking at a certain kind of "mental epidemic" whereby people, as individuals, develop (on the basis of variable information) rather similar forms of concepts. The human mind is able to build concepts by producing inferences on the basis of some information provided by other people and by experience. The templates in our minds filter information from other people and from the world around us and build relatively predictable structures out of that information.

So the point we can take from what was said so far is that people will routinely reconstruct, distort, change, and further develop information they receive. What then happens is that concepts gain a lot of variants, such as via different interpretations. Most variants are not entertained for very long and simply disappear. Others (but a fairly small number) do stay around in the mind for awhile but are not as easy to transmit to other people for one reason or another. Sometimes this is because the ideas are not fully-formed or perhaps it is because the person lacks the means to express the ideas adequately. An even smaller number of variants *do* remain in memory and *are* capable of

being transmitted to others, but the problem is that people do not recall them very well. A very, very small number of variants have pretty much the whole shebang: they retain in memory; they are capable of being easily communicated to others; the communication to others is more or less faithful to the original idea. These are the ones that we tend to observe more, not only in our own culture but in various other cultures as well.

Categories, Inferences, and Expectations

The structure of the messages exchanged by minds or within a given mind does not by itself tell us how the mind will react to those messages. To understand that, we must know a lot about human psychology, about the way minds produce inferences that modify and complete the information exchanged. We have to realize that when we create a new concept in our minds, this process is not just entirely driven by the input we receive but by a combining of that input with previous representations. We also have to realize that human minds are inhabited by a large population of mental representations. Most representations are found only in one individual but some are present in roughly similar forms in various members of a group. To account for this is to explain the statistical fact that a similar condition affects a number of organisms, as in epidemics. Different people will have generally inferred similar representations from publicly accessible representations: other people's behavior, gestures, utterances, man-made objects, etc. The diffusion of particular representations in a group, as well as similarities across groups, can be predicted if we have a good description of what mental resources people bring to understanding what others offers as cultural material - in particular, what inferential processes they apply to that material.

Humans, according to cognitive scientists, have *ontological categories* and these contain a number of *default inferences* that help the mind acquire new concepts (or, rather, kind-concepts) without having to reacquire information. Certain concepts that are presented to the mind might be taken as true as long as there is no explicit information to the contrary, as stated above. These types of inferences are called *default inferences*. With inferences come *expectations*. Generally with very little information the human mind tends to use ontological categories (and the inferences they support) to create particular expectations. What is interesting is that imagination (which is what is basically going on here) is not just a relaxing of intellectual constraints, but rather is constrained by the ontological categories and the (intuitive) expectations derived from them. It would seem, in other words, that ordinary concepts must be present to give rise to extraordinary (imaginary, supernatural) concepts. In general, imagination is constrained by the templates that, for all practical purposes, seem to be built into us.

Sometimes many imaginary or supernatural concepts (and this includes religious concepts) work, so to speak, because these concepts do two important things: (1) they *violate* certain expectations from ontological categories, and (2) they *preserve* other expectations. So, in other words, these types of concepts will tend to take an existing ontological category and give it "special features" that make the particular instance different from other instances in the same category. The extra information (or "special features") serves to contradict information that is provided by the ontological category. It

would seem to be the case that these types of concepts (“supernatural” or “paranormal”) include information that is counterintuitive relative to the category activated. It is almost as if the special features can be thought as being part of a “tag” identifier that gets added to the general template and the information contained in the tags contradicts information provided by the template or ontological category. More specifically, a concept preserves all the relevant default inferences except the ones that are explicitly barred by the counterintuitive element. As an example of all this, our mental encyclopedia specifies that objects in some ontological categories (ANIMAL, PERSON, PLANT) have biological properties. So a simple violation of expectations occurs when we attribute physiological or other biological processes to a category that does not intuitively include a biology (such as a rock or statue that “bleeds”, for example). Some other examples:

- Omniscient God [PERSON] + special cognitive powers
- Visiting Ghosts [PERSON] + no material body
- Zombies [PERSON] + no cognitive functioning
- Virgin Birth [PERSON] + special biological feature

We should realize that if we say two ontological categories are “close” or “similar”, what we mean is that they have lots of inferences in common. So, in common stories, turning a prince into a frog is okay because frogs are animate beings that go where they want, have goals and intentions, and so on. So you can still run all sorts of inferences about the narrative character once it is turned into an animal. You can describe it as *knowing* that it can be saved by a princess, *hoping* to meet one, *trying* to get a kiss, and the like. This would be quite a bit more difficult if the prince had been turned into a potted geranium or into a carburetor. (We also have to realize that when the prince is turned into the frog we have the counterintuitive notion of an animal with the cognitive abilities of a human.) The point is that *metamorphoses*, like these, occur between close categories so as to preserve a source of inferences. Consider the concept of trees that can somehow record or imprint information that they somehow see. Some trees are considered to recall conversations that were said in their vicinity. This violates some expectations (namely, the ability of trees) but note that it does keep others. For example, it is never postulated that trees can record conversations that *never occurred* or that they can record conversations *before they occur*. (Also note that the banal idea that the trees can hear conversations but cannot remember them does not really occur all that much.)

There are two ways in which supernatural concepts become “part of” the mind: (1) the supernatural concept inserts a violation of expectations, and (2) the supernatural concept preserves all the relevant default inferences except the ones that are explicitly barred by the counterintuitive element. These two things combined is a known process in human thinking called *default reasoning*. The idea behind this practice, in simple terms, is that we have (1) an instance of the usual concept and (2) a minor change added to it, that only affects some of its properties. The human brain is very good at discerning such things. And the reason we are good at transmitting these altered concepts is because, for the most part, everyone is working off of the same templates. (If we did not have such templates, transmission of concepts, much less altered concepts, would become very difficult and

tedious.) The combination of *ontological violation* and *preserved inferential potential* explains the family resemblance among supernatural concepts.

The idea we have to keep in mind with all of this is that it is not the concepts themselves that are necessarily common in nature, but rather the templates that produce the concepts in the first place. One major question of this would be how many templates are there? Or, more appropriately, how many ontological templates? Many cognitive scientists feel that the list is probably quite small. The common ones given are: ANIMAL, PERSON, TOOL, NATURAL OBJECT, PLANT, NUMBER, FACE, POLLUTING SUBSTANCE. Then you can add to this the violations. And that brings up how many violations there might be. One would initially think there could be a large number until one remembers that the violation has to preserve the expectations. The idea, remember, is that the violation should allow you to produce many inferences. If it does not then it is a cognitive dead-end. For example, having a religion based on the notion “If you pray to this statue, it will disappear” is a cognitive dead-end if nothing follows from the statue disappearing.

The key with all of this is to recognize that you can have violations of expectations of the kind-concept or violations of expectations of the ontological category. We need those counterintuitive properties for a supernatural concept to take hold. In other words, we can have persons represented as having counterintuitive physical properties (ghosts or gods), counterintuitive biology (living forever, cannot be killed), or counterintuitive psychological properties (unblocked perception, prescience, omniscience). We can also imagine animals with these properties. Tools and other artifacts can be represented as having biological properties (being able to bleed, for example) or psychological ones (being able to hear what you say, for example).

With this we can consider three important questions:

1. Why does there seem to be little variation in supernatural concepts?
2. Why are some combinations of concepts more frequent than others?
3. Why are some taken so much more seriously than others?

The first two are largely answered by the previous discussion in that we have the concept of ontological templates, expectations derived from those templates, and specific violations of concepts derived from those templates. (The third question requires a little more depth.) However one element that also needs to be considered in relation to these two questions (and eventually speaks to the third question) is the nature of how these concepts are recalled. The stable concepts are those that survive cycles of acquisition and communication in roughly similar forms. Remember that we have two things: violations of expectations of the kind-concept or violations of expectations of the ontological category. Research shows that people tend to remember the latter much better. Religious and supernatural concepts generally tend to be of the ontological-violation category, although kind-concept violations are usually added to those as well; these latter, however, are not indispensable to the representation. It is because of this kind-concept variation *not* being indispensable, that it is the part of the representation most likely to change over cultural boundaries while the ontological-violation stays the same.

Let us now consider an example of a strict ontological violation as opposed to a kind-concept violation. If you say “There was a black giraffe with six legs,” this violates people’s expectations about the kind-concept. If you say “There was a giraffe that gave birth to an aardvark,” this violates expectations about the ontological category (because of the intuitive principle that animals are born of other animals of the same species). In a similar fashion, if we talk about a man who walks through walls (ontological violation), that is different than a man with six fingers (violation of expectations, but not of those expectations that define the ontological category PERSON). This distinction seems to be interesting, particularly in terms of supernatural concepts because not all violations are successful. For example, consider two concepts. (a) We worship this woman because she was the only one ever to conceive a child without having sex. (b) We worship this woman because she gave birth to thirty-seven children. These both include a nonstandard conceptual association and they both include a violation of expectations, but (b) is not an ontological violation. In other words, both of these contradict some conceptual information, but not that associated with the ontological categories. Another way to look at it is that the “tag” (or “special features identifier”) does not contradict the relevant ontological entry in the one case, but does in the other. We have to realize that people will tend to have better recall for ontological violations than for things that might be considered anomalies or oddities or even for just standard associations.

There is also the notion of combining violations. Consider two such violations: some being has cognitive powers such that it can hear future conversations; some artifact can understand what people say. It would seem that an even better concept could be produced by combining these two, for example, an amulet that can hear what people will say in the future. We can also consider a person who can see through opaque walls and only sees what does *not* happen behind them (a combination of two violations of intuitive psychology); a dishwasher that gives birth to offspring but they are telephones, not little dishwashers (combining a transfer of biology to an artifact with a breach of biological expectations); a statue that hears what you are saying and disappears every now and then (combining a transfer of psychology to an artifact with a breach of intuitive physics). As it turns out, these kind of multiple-combination violations are not recalled as well. (When these do occur, it is mostly in the rarefied intellectual atmosphere of scholarly debate or literate theology but not in the popular, culturally widespread forms of supernatural imagination.) The idea is that a general focus on one violation at a time for one particular category seems to be the way to achieve much better recall. Another good example of this is those who pray to statues and who also believe that divine beings can hear your prayer anywhere. Consider the common idea of the statue of the Virgin Mary. These people tend to have a concept of agents that can hear you wherever you are; they also have a concept of artifacts that can hear you. But they do not have the concept of artifacts that can hear you wherever you are. That is, people who want to pray to the Virgin Mary of such and such a place *actually go there* and, in most cases, stand *within hearing distance* of the statue to say their prayers. Again, the combination of just one violation with preserved expectations seems to be a cognitive ceiling (in most cases), leaving a concept that is both attention-grabbing and that allows rich inferences. (Violations are only “attention-grabbing” against a background of expectations.)

Systems and Cognition

The human brain picks up different cues about a given object and, after processing the information, uses one of the ontological categories it has along with the associated expectations of those categories. (What would be interesting to consider: how do new ontological categories get formed? To what extent is that possible? How do expectations change or get added to categories?) The brain sorts concepts along ontological distinctions and produces category-specific inferences - but this is generally done beneath the level of conscious awareness. We have very precise expectations in our minds for certain principles but this is not something we are aware of, at least until some aspect of physical reality around us violates those principles.

As just an example of some of the principles we operate with, we have an intuitive understanding of what it means to “have a mind” as well as an intuitive understanding of mental representation which ties into a notion of *intuitive psychology*. We have an intuitive understanding of the physics of solid objects and thus we possess an *intuitive physics*. We have an intuitive understanding of physical causation, which means we tend to produce interpretations of “this and then that”; i.e., something happened *because* something else immediately prior happened. We have a means of detecting goal-directed motion, meaning we have a *goal-detection* system. (Example: if we see a cat chase a mouse, we have an understanding in our minds that the *goal* of the cat is to catch the mouse. If we just went on physical interaction, we might think the running mouse somehow *caused* the running cat or vice versa. Instead we associate this with something in the cat’s mind that wants to get closer to the mouse.) We also have an *agency-detection* system, which serves to allow us to perceive some sort of agent behind events. (This appears to be tied in with, and triggered by, our *predator-avoidance* and *prey-detection* systems.) Along with that, we seem to have the ability to keep track of who’s who in a given interaction. In other words, we can intuitively distinguish between participants. We have an intuitive ability to link structure to function. For example, we see a screwdriver and, even if we have never seen one before, we can guess that by its very *structure*, it is designed to do some sort of *function*. This can even be more abstract in the sense that if a man was carrying a screwdriver and fell and scratched himself, we would have no problem understanding why that happened. This is our *structure-function* system (i.e., hammers pound, knives are sharp). We also seem to have an *intentional use* system, various types of *contagion* systems, a *moral-emotional* system, a *verbal communication* system, and a *social exchange* system.

It seems we have different systems in the brain for handling all of these “intuitions” and each of these specialized systems only handles a limited aspect of the information available about our surroundings. These systems are often referred to as *inference systems* by cognitive scientists. Now an important point about all this is that seeing or otherwise perceiving an object in the world activates a particular set of inference systems. Not all objects activate them all. The fact that a certain type of object activates a certain panoply of inference systems is what we mean when we say that it belongs to a particular category. A key concept here is that different kinds of inference systems are turned on or

off when the brain considers different types of objects and the mind interprets what is being perceived. (Cognitive scientists sometimes refer to appropriate inference systems as “ontological categories with theories.” These systems can sometimes be multi-faceted. For example, it seems that our internal description of other people’s mental life is not the product of a single, general theory of persons but rather the outcome of many different perceptions, simulations, and inferences about different aspects of what they experience. In other words, what seems to be the unified domain of “intuitive psychology” is in fact a collection of subdomains with specialized systems. Many of the specialized systems in adults are already present in infants, in the form of particular expectations (e.g., objects are continuous), preferences (e.g., for differences between human faces as opposed to those between giraffe faces), and ways of inferring (e.g., if this thing moves of its own accord, try and identify its goal; if it moves because someone pushed it, don’t bother).

This allows the application of specific inference systems to specific domains of reality. These then tend to combine. So if something activates our physics system, our goal-detection system, as well as allows for some biological expectations then it is what we usually call an ‘animal.’ If it activates all that plus intuitive psychology, it is what we usually call a ‘person.’ If it activates physics and structure-function, it may be either a ‘man-made object’ or an ‘animal part.’ If in addition it activates intentional use, it is what usually call a ‘tool.’

It would seem, however, that having particular ontological categories is a matter of choice in the sense that the world lends itself to many different ways of categorizing its contents. However, it must be said that the choice depends on which species you belong to. In the inference system view of the mind, what makes our minds smart is not really a set of encyclopedic descriptions of such things as artifacts and animals in general but the fact that very specialized systems are selectively turned on or off when we consider different kinds of objects. What we have to realize is that (1) some inference systems are activated by several different kinds of objects, and (2) many objects migrate from one of the so-called “ontological categories” to another, depending upon context. As an example of that last one, if you take a fish out of the water and serve it poached, it has ceased to be only an animal and has become, to some extent, an artifact. If you use it to slap someone’s face or squash a bug, it has become a tool. The object itself has not changed, of course, but the kinds of inferences that the mind produces about it do change. The key points with some of the above is that (1) perception and understanding of surroundings require inferences and guesses about different aspects of objects around us. (2) The mind is composed of specialized systems that produce inferences about these different aspects. (3) Objects in different “ontological categories” activate different sets of those specialized systems. (4) Each inference systems is itself composed of even more specialized neural structures.

Our evolutionary history has shaped our inference systems as evolved responses to recurrent problems in ancestral conditions. So we must (1) reconstitute the particular features of these problems in such conditions; (2) deduce what specific computational principles could solve these problems, and therefore predict some nonobvious design features; (3) examine whether there is independent experimental or neurophysiological

evidence for the corresponding specialized inference system; and (4) evaluate how the special system described by psychologists could have evolved from other systems and whether it would confer reproductive advantage to its bearers. What this means is that we cannot just consider a human capacity (e.g., the capacity to read and write) and make up a story that would make it adaptive (written communication is very convenient). In this case, it happens that literacy does not require a specific system in the brain. It just recruits systems that served throughout our history and still serve other purposes (recognition of visual shapes, segmentation of words into syllables, motor control of the hand and wrist, etc.).

Humans depend upon information and upon cooperation, and because of that they depend on information about other people's mental states - that is, what information they have and what their intentions are. No joint hunting expedition, war raid or marriage negotiation can be organized without precise monitoring of what other people want and believe. Part of this leads to the notion of *decoupled cognition*. To evaluate information provided by others you must build some mental simulation of what they describe. Also, we could not carry out complex hunting expeditions, tool making, food gathering, or social exchange without complex planning. The latter requires an evaluation of several different scenarios, each of which is based on nonactual premises. We also need this kind of cognition to produce external representations.

Decoupled cognition is very important to cognition in general. Decoupled cognition is thinking about something that is not happening now and not reacting to it as if it were happening now. It is, basically, imagination. Even memories (thinking about past events) requires decoupling. It is also necessary to produce external representations of things, such as when looking at a drawing of something and thinking of what the drawing actually represents.) A crucial point, however, with decoupled thoughts is that they run the inference systems in the same way as if the situation were actual. This is why human beings can produce coherent and useful inferences on the basis of imagined premises. The point is, however, that it is useful to reason away from the here and now, but that works only if such reasoning is tightly constrained. If our inferences could run wild in any fashion, it would provide the basis for efficient behavior. (More appropriately, the connection between the hypothetical situation and the consequence must be somewhat sensible.) Hypothetical scenarios suspend one aspect of actual situations but then run all inference systems in the same way as usual. The one aspect of actual situations missing is usually the situation itself. Keep in mind that supernatural concepts tend to match this: they include one violation of expectations and then run all relevant inferences in the same way as usual. Thus supernatural concepts seem to be a consequence (or by-product, or even spandrel) of the ability that humans have to decouple representations.

As a means of summing up just some of the above, we can say this: the makeup of the human mind seems to be such that it is composed of systems. Among these systems are a set of intuitive ontological expectations, a propensity to direct attention to what is counterintuitive, a tendency to recall it if it is inferentially rich, a system for detecting and overdetecting agency, a set of social mind systems that make the notion of well-informed agents particularly relevant, a set of moral intuitions that seem to have no clear

justification in our own concepts, a set of social categories that pose the same problem. It is a hallmark of the human mind that we can entertain plans, conjectures, speculate on the possible as well as the actual. Among the millions of messages exchanged between brains, some are very attention-grabbing because they violate intuitions about objects and beings in our environment. Concepts have the capacity to activate a variety of systems in the human mind in such a way that makes their transmission possible and this certainly is the case with religious and/or supernatural concepts. By “activate a variety of systems” we can, for now, just say that this means the concepts *excite* the human mind in some fashion, remain in memory, and trigger multiple inferences in the *precise* way that will get people to hold them true and communicate them. A complex entity, the human mind produces a multitude of mini-scenarios, evanescent links between thoughts and new concepts that, in general, quickly degrade. But there is a cumulative effect of repeated selective events.

It seems we have to realize the validity of the notion of *selective religious concepts*. Specifically, human beings tend to produce many variants of concepts in our minds and that includes supernatural concepts. A much smaller subset of those variants can be successfully transmitted from person to person. Either that same reduced subset or an even further reduced subset can become stable in a group or society. And that is really a key point: the basis of religion (as opposed to the basis of supernatural concepts) seems to be based on selective concepts and selective memory. It also speaks to how concepts form in the minds of individuals and then are spread to many other individuals to eventually make up a cultural phenomenon. Some concepts connect with inference systems in the brain in a way that makes recall and communication very easy. Some concepts happen to trigger our emotional programs in very specific ways. Some concepts happen to connect to our social mind. Some of them are represented in such a way that they soon become plausible and direct people’s behavior. The ones that do *all* of these things are the religious concepts that we tend to observe in various societies.

Concepts That Matter

The diversity of what we call “religion” relates, often, to the viewpoint people have of supernatural agents. The differences in religious concepts speak to the way in which people conceive of supernatural agents and what they think these agents are like or what they can do, in the morality that is derived from beliefs in these agents and in the rituals performed relative to these agents. We can say that, at its core root, religion is about the existence and causal powers of nonobservable entities and agencies. One part of looking at religion looking at why human beings have religious concepts in general. The second part is to look at the specific religious concepts. In other words, there is the *basic essence* of religious belief and then there are the *specific details* of various types of beliefs. However, since we have already stated that both the basic essence and the specific details are usually rooted in the concepts of the supernatural, we have to consider how supernatural concepts are equated with religion or religious concepts.

Speaking of the relationship between supernatural concepts and religious concepts, we are not too far off the mark when we say that religious concepts are those supernatural

concepts that *matter* or that have some direct emotional bearing on the believers of those concepts. When very strong emotional states can be attached to the representation of some supernatural concept we have the beginnings of what we call “religion”. Having a concept of supernatural entities, in the abstract, is one thing but having a concept of religion encompassing all the notions, norms, and activities connected to those supernatural entities is an entirely separate issue. We generally call supernatural concepts “religious” when they have important social effects, when rituals are performed that include these concepts, when people define their group identity in connection with them, and, as stated, when strong emotional states are associated with them. (The social effects usually take the forms of rituals that exemplify the supernatural concepts but also formulate a group identity in connection with those rituals.) This brings up a good dichotomy as well. There is a major difference between *contemplative* views of religious or supernatural concepts, which are largely concerned with purely theological understandings, and *practical* views of religious or supernatural concepts, which deal with the more mundane business of representing religious agents in practical contexts (and sometimes interacting with them). It is important to realize that in many religions there is no need for a general, theoretically consistent expression of the qualities and powers of supernatural agents (or their realms, their motivations, etc). What these religions much more advocate is a set of precise descriptions of how these agents can influence their own lives, and what to do about that.

So these supernatural agents are important to people (they *matter* to people) but is that what makes the concepts surrounding them important? That is circular logic. They matter because they are important and they are important because they matter. Some people get out of this by saying that the importance comes in because these agents are believed to exist. In other words, people place more importance on the stories of their god rather than on, say, Santa Claus because they believe the former exists and they do not believe the latter exists. The issue, however, is that this belief is not a cause - it is a consequence. People believe *because* they place importance on the entity or agent in question. It is not that they place importance on the entity or agent in question *because* they believe. The other side of that is that sometimes people believe that supernatural concepts are important because people believe that the agents have extraordinary powers. This is, however, just another way of formulating the problem: why do people believe these supernatural agents have these extraordinary powers? (We also have to realize that these “powers” are usually not construed in the abstract when they matter; rather they are those powers that are relevant to practical concerns.) We also have to realize a crucial point: most gods, spirits, and supernatural agents are represented as agents that we can interact with to some degree. And it is this essence of interaction that shapes the way people intuitively think about the alleged powers of these agents. [See page 141-142 for interesting concept on how people view intervention of gods.] This interaction with these beings is often modeled on that of interaction with other persons. That is quite an important point.

Anthropologists and cognitive scientists have noted that there is an anthropomorphic tendency not just in visual artifacts but also in visual perception itself among human beings. In other words, we tend to interpret even very faint cues in terms of human traits.

In the case of supernatural agents and gods we have to note that these agents are not necessarily always represented as having *human-specific* features, but more generally as having *minds*. In fact, it would seem that the *only* feature of humans that is *always* projected onto supernatural agents is that of the concept of mind. In fact, intuitive psychological inferences seem to be applied to intentional agents in general and not just to persons. So that might mean that concepts of gods and spirits might be more organized by our intuitive notions of *agency* in its general aspects, i.e., the abstract quality that is present in animals, persons, and anything that appears to move of its own accord, in pursuance of its own goals. This generalization is important because it appears that in many situations our intuitive systems can detect this generic form of agency even without seeing a direct agent or having a description of it. Evolutionary psychologists tell us that human beings seem to have evolved with a system that “hyper detects” apparent animacy or agency around them, and this was most likely for survival reasons. An example is that if we hear grass moving or a sound behind us, we automatically assume that some agent caused it and we have to respond in some fashion. In humans this tended to get wrapped up in the predator-avoidance and prey-detection systems of our mental makeup, which have a bias to detecting agents but not detecting of what type the agent belongs to.

Applying this to religious and/or supernatural concepts, people do not so much visualize what supernatural agents must be like as they do detect traces of the alleged presence of these agents in many circumstances. This is basically exactly what our agency detection systems do for us in more mundane circumstances as well. The point is that we have very sophisticated inference systems geared to describing other agents’ mental states and producing plans and expectations from these descriptions. As far as the notion of supernatural agents, we have to realize that often people do not have very clear notions of *exactly* what some of the agents are like. This, again, speaks to the agency detection that is more concerned about finding traces of agency in general rather than in explicitly determining all details of that agency.

There is a problem lurking here however. Obviously from an evolutionary perspective and in the context of predator-prey relationships, it would be much more advantageous to overdetect agency than to underdetect it. The expense of false positives (seeing agents where there are none) is minimal, *if* we can abandon these misguided intuitions quickly. In contrast, of course, the cost of not detecting agents when they are actually around could be quite high. There is a key point there: it makes sense to have a “hyper detection” system *if and only if* you can quickly discard those false positives; otherwise one could spend all their time in constant fear of things that are not there or constantly chasing after prey (thus expending energy) that is not there. The problem lurking here is that religious and supernatural concepts are not like this. These concepts are *stable* concepts, in the sense that people have them stored in memory, reactivate them periodically and assume that these agents are a permanent fixture in their environment. So how does such over-detection remain stable even where there is little to no evidence of the agents’ actual existence?

First one has to ask what one considers “evidence”. But even beyond that it is key to realize that a lot of this stability comes from the utterances and behavior of other people

who also hold the same concepts. It is not necessary that one necessarily have some sort of direct experience (a form of evidence) with a given supernatural agent, but rather they can believe on the basis of concept itself, which was prior. In fact, even when people claim such direct experiences, it is the prior concept that is used to give meaning to the experience - not the other way around. So we have the idea that agency detection gives initial salience to concepts of barely detectable agents, but it still leaves to be seen how such concepts can be made more stable and how it is that they come to *matter* to people. If there is a connection to the predator-avoidance mental systems, that might certainly go some way toward explaining the emotional connection to the supernatural and the religious.

We also have to realize, keeping with this same theme, that we use the inference systems that manage our interactions with other people all the time - even when we are *not* interacting with people. This is part of how the system can run in a decoupled mode, which means it is disengaged from actual external inputs from the environment or external output in behavior. This allows for a crucial human capacity: imagining counterfactuals. Applied to interactions, this means that before we make a move in any social interaction, we tend to automatically (and very quickly) consider several scenarios. This allows us to choose certain courses of action rather than other ones by considering people's reaction to our own actions. Not only can we do this with real people but even with purely imaginary ones, such as when people make up "what if" scenarios (such as for interviews) or when children rely on "imaginary friends". What this means is that humans, starting from very early childhood, are able to maintain social relations in a decoupled mode and we can maintain coherent representations of interaction with persons even when these persons are not around or do not even exist.

We have to realize that this same system being applied to persons and even non-persons (say, of the imaginary sort) can apply to gods, spirits, and other supernatural agents because they are construed as beings with which we can interact (in some fashion) by using our social inference systems. One example of this type of "interaction" might be the act of praying. The idea of the interaction assumes that the god or spirit can hear you, that they can understand you, that they can actually do something about your request, that they understand what you are asking for. In some arenas, there is a sort of barter in the sense that it is assumed that the god or spirit wants something in return for the prayer, such as certain actions, for example, an animal sacrifice or the person to "return the favor" to others. There is, however, a key difference. In dealing with people, we assume that other people are social agents that have *limited* access to strategic information. (And we try to evaluate the extent to which they have access to that information. We constantly run complicated estimates of what they know, how they came to know it, what they conclude from it, etc., given the obstacles between facts and their knowledge of these facts.) With supernatural agents, people tend to presume that these agents have *full* access to strategic information. (What this means is running all those estimates I just mentioned *minus the obstacles*.) For example, some supernatural agents are said to know everything or at least be capable of knowing everything. Some are said to be possibly invisible thus allowing them to acquire private information that actual persons would have a hard time doing. (We should note here that when we say "strategic information" what is meant is

the subset of all the information currently available, to a particular agent about a particular situation, that activates the mental systems that regulate social interaction.) The key with most supernatural concepts, like gods, is that intuitively people who represent certain situations in the world immediately assume that god represents the information that is strategic to them. When people represent a particular situation and the strategic information about that particular situation, they tend to automatically assume that the gods/spirits know about it. This is the basis of their inferences and actions towards those gods/spirits.

Of course this all still leaves open the question of what motivates people to have concepts of gods and spirits. People want to tend to look for reasons *why* people entertain these concepts. The key here seems to be that people *do not* invent gods and spirits, per se. What they do is receive information that leads them to build such concepts. Particular systems in the brain specialize in particular aspects of objects around us and produce specific kinds of inferences about them. That might lead us to wonder what it is that nudges the systems to pay attention to particular cues in our surroundings and to produce inferences. Certainly it would seem that part of the solution to this would be that these mental systems are driven by *relevance*. We can say that information in the environment is attended to by mental systems as a function of the inferences that the various systems can produce from it. When looking at the environment or when dealing with people, we interpret things around us. We (or, rather, our minds) tend to choose an interpretation that produces more inferences than others or requires fewer inferential steps, or both. Speaking more generally, an “optimal interpretation” is one that corresponds to a higher inferences/inferential steps ratio than other available interpretations. Speaking to cultural concepts and transmission, some types of input are easily acquired because they correspond to intuitive expectations. In this case the inferential effort required to assimilate this material is minimal. This also happens in the realm of supernatural concepts. The point is that the concepts built according to our ontological templates are built by *relevance-driven inference systems*. 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. What we can conclude from this, at least as a general rule, is that people build concepts in ways that activate their inference systems most and produce the richest set of inferences with the least cognitive effort.

This can all specific to specific elements of the human condition. Social inference systems in the mind handle notions like morality and situations of misfortune. It is important, however, to see that religion does not really support morality, it is people’s moral intuitions that make religion plausible to them; religion does not explain misfortune, it is the way people explain misfortune that makes religion easier to acquire.

Organization and Institutionalization

In some historical conditions, religious specialists group themselves in institutionalized associations and diffuse a particular description of what their function is. It then starts to

become clear to everyone that, first, there is such a thing as “religion” as a special domain of concepts and activities; second, that there are different “religions”, that is, different possible ways of practicing religion, one of which is more valid; third, that adopting a particular religion means joining a social group, establishing a community of believers, emphasizing the demarcation between us and them. The idea here is that people in a group tend to have a similar description of supernatural agents, a local doctrine of what gods or spirits are up to. The very fact that people in a group share this religious ideology and perform important rituals together sharpens their perception that they are indeed a group with clearly marked boundaries. Worshiping the same gods creates a community and by implication gives that extra edge to the feeling that people with different gods or spirits are either deluded or are even potential enemies. (Indeed, people who become deeply involved in religion, for whom it is a matter of vital importance that their doctrine is the only source of truth, will not hesitate to attempt to “convert” others to their faith and, in some cases, massacre those do not participate.) We have to realize that concepts do not necessarily form a doctrine; it takes people, in particular religious specialists, to build an explicit set of religious understandings. The other thing to realize is that it is only in very special circumstances that specialists can do that.

But how to become a specialist? It seems that it just requires the recognition of some difference in ability. Once this is detected or imagined, it can lead to a minimal division of labor, where people are called upon in particular contexts. It is then only a matter of opportunity for these people to accrue additional benefits on the basis of their reputation and thereby create a rudimentary religious specialization, and, even more particularly, one that allows them to designate other specialists. Religions do differ in this, however. For example, one can consider the religion of the Fang and the religion of the Christians. For the Fang, their specialists are determined by some sort of internal essence (even if that cannot be nailed down). For Christians, it is often people who have undergone special training. For the Fang, the competence of specialists is established at the level of a village or community, whereas for Christians this is via what amounts to a large organization (at least for the most part). For the Fang, the services offered by specialists can vary widely. For Christians, the services are uniform - i.e., what you get from one priest is very much what you would get from any other.

The common picture people have is that for different types of religious formation, such as that described in the preceding paragraph, is that a distinctive “faith” is expressed as a doctrine. To diffuse that unique doctrine and organize activities connected with it, a special organization is founded, with the result that ritual is standardized. Yet evidence seems to suggest that this is really putting the cart before the horse, so to speak. It seems, in actual fact, that doctrines are the way they are because of the organization of religious institutions - not the other way around.

Organization of religion seems to occur best in *complex states*, in polities where people’s decisions were made in the context of large networks and institutions. This is also where literacy flourished and that literacy, combined with complex social organization, helped to support the notion of stable associations of religious specialists. These groups of specialists could be transformed into an organized social group, much like a guild or

corporation. These groups would derive their livelihood, influence, and power from the fact that they would provide particular *services*, in particular the performance of rituals. This put them in something like the role of craftsmen and, like craftsmen or like unions, they try to *control* the market for their services. They try, in other words, to establish common prices and common standards in order to stop non-group members from delivering comparable services. We have to realize that in most case religious goods and services put the specialists in a fragile position. The rituals (designed as a guarantee that the specialists are efficient in dealing with supernatural agents, divining the will of supernatural agents, protecting against misfortune, etc.) could be done by anyone, certainly by appearances because the benefit is often elusive. (When societies could be kept largely illiterate, this was not as much of a problem.) This means religious groups often try to gain maximal political influence and to gain centralized authority. (This is similar to how unions or craft-guilds might try to garner political support and lend their weight to various political factions.) They also try to come up with a *brand*. What this means is a service that is (1) distinct from what others could provide, (2) similar regardless of which member of the guild provides it, (3) easily recognizable by its particular features and (4) exclusively provided by one particular organization. This branding process is likely to occur whenever an organized group of producers is in competition both with local, independent producers and with rival organizations. What is interesting, however, is that this creation of recognizable brands of religious services has consequences for the kinds of concepts that can be put forward by the religious institutions that form. We have to realize that the concepts of supernatural agency, as well as the norms of behavior that come with them, are presented by the guilds as an explicit *doctrine*. So, in order to offer a unique set of religious services *as well as* a stable one from one religious specialist to the next, a guild has to describe what it offers. Thus literate guilds promote *texts* or *scriptures* as the source of guaranteed truths. They will tend to downplay intuition, divination, personal inspiration, orally transmitted lore, and “essential” persons because all of these naturally fall outside of the guild’s direct control. The use of texts as authority strengthens the notion that “true” descriptions of supernatural agents come in the form of a stable and general doctrine, rather than on-the-hoof, off-the-cuff, contextual solutions to specific problems. The use of these texts also tends to make the religious doctrines more coherent, in the sense that all the elements that compose the description of supernatural agents can be brought together for consideration much more efficiently than when done via other means. Guilds offer an account of gods and spirits that is generally *integrated* (most elements hang together and cross-reference each other), apparently *deductive* (you can infer the guild’s position on a whole variety of situations by considering the general principles) and *stable* (you get the same message from all members of the guild). That last feature is very important when it is related to diffusion. Guilds try to remove the focus from *local* supernatural agents and instead promote agents that are *general*, that anyone can deal with and be influenced by. What happens to the “soul” after death, for example, is a common theme for guilds that want to suggest that what happens is a *general* process that applies to all humans. This naturally leads such guilds to promote the concept of *salvation* and, thus, the doctrines of the guild being the sure guarantee of achieving that salvation. Then, of course, the guild has to come up with consequences for not achieving that salvation (i.e., not obeying the tenets of the guild).

We should note that people may well resort to the services of various literate guilds and even identify themselves as followers of that guild, but this does not mean that their supernatural concepts are really organized by the messages delivered by these specialists. Actual religious concepts always seem to stick out, as it were, to distort the official message or to add all sorts of officially incorrect interpretations. This is in fact inevitable, because the official messages themselves must be understood by people; which means that they must produce inferences to make them coherent or relevant; which in turn implies that their mental constructions must complete, often in divergent ways, messages that are by nature fragmentary, in this as in other domains of cultural constructions. This also leads to people's tendency to make the general and abstract religious concepts of a guild more *local* and more *practical* and that the influence of the guilds is constantly threatened (in their view) by less organized, less coherent, and less general versions of religious concepts.

The Concepts of Belief

It makes very little sense to try to explain *how* people believe in supernatural and religious concepts if we do not have a clear description of *what* those concepts actually are (as opposed to what we think they are). We need to know not only what the concepts are but also how they were acquired in the society or group in which they are found (and thus transmitted to the person) and how the concepts are organized in the human mind. We cannot even really rely on the idea of "common features" of religion or of supernatural concepts, at least not entirely, because the phenomenon of these concepts is the result of something called *aggregate relevance* – the successful activation of a whole variety of mental systems. (This is important to speaking of *belief*, because knowing about supernatural concepts is different from believing in them.) Within that, we have to understand that these systems (or, rather, their activation) increase the likelihood that concepts of this kind get built in human minds, *and* that they appear intuitively plausible, *and* that someone agrees with their explicit formulation, *and* that they are left untouched by corrosive forces that might serve to break them down (like scientific arguments against a given concept, for example, or being ridiculed by others for entertaining the concept).

Regarding belief, the origin of that belief is often not of concern – at least not to the believers. People often do not ask where their own beliefs come from although they are more than willing to ask where the beliefs of others have come from, particularly when those beliefs differ in significant ways. When people are forced to explain their beliefs, if they go for clarity, they often run into inconsistency. When they try to avoid inconsistency, they do so at the expense of clarity. We have to realize that most belief systems that people entertain are not refutable by any measure they would accept. So, for example, if you are told that a high dose of vitamins can help the body fight an infection, the only evidence that really counts is a test that could refute the claim: if for instance clinical tests showed that patients treated with vitamins had no better recovery than those without vitamins, this would cast doubt on the alleged benefit of such a treatment. Belief claims are not usually refutable in this sense. For example, if one claims that Jesus Christ

was a true “Son of God” (meaning literally of a divine parent), even if the biblical stories which relate this aspect are found to be wanting by scholarly analysis, people will often still believe the kernel of the story simply because that is what they *want* to believe. Holding up inconsistencies in the biblical stories will often do little good because people did not base their beliefs on the biblical stories being consistent in the first place. The real point of this is that numerous experimental literature suggests that there are a set of mental processes that specifically lead us away from clear and supported beliefs.

As a prime example of that last statement, we can consider something that is called the *consensus effect*. This is where people will tend to adjust their impression of a scene or event to how others describe it. In other words, they will tend to agree with others around them about what happened or what was seen even if, in actuality, that is not how they originally perceived it. It is a sort of selection effect that is based on the presence of many others. Going along with this is the *false consensus effect*. This is where people tend wrongly to judge that their own impressions are shared by others - for instance, that other people’s emotional reaction to a scene is substantially similar to theirs or their thought that other people will have the same belief about an event that they do. There is also something known as the *generation effect*. The idea here is that memory for self-generated information is often superior (in terms of recall and vividness) to memory for actually-perceived items. What this means is that in a particular scene or during an event, details that you provide yourself will be recalled better than those that are suggested by someone else who was also present. Feeding right into that is the *illusion of memory*, where false memories are created and people are intuitively certain that they did hear or see some item that was in fact imagined or was suggested to their memories by other people. That last point is important for one aspect of cognition that is referred to as *source monitoring defects*. People in some circumstances tend to get confused about the source of particular information. (Was it their own inference or someone else’s judgment? Did they hear it or see it or read about it?) This makes it difficult to assess the reliability of that information. Another cognitive mental process is *confirmation bias*, which is the case where people will tend to detect and recall positive (confirming) instances of a particular hypothesis but they are less able to detect possible refutations. The oft-stated example of this is the mystery that people might attach to the event where they are thinking about a friend and that person calls. What they forget are all the instances where they were thinking of that friend and that person did not call. Finally, there is something known as *cognitive dissonance reduction*. People tend to readjust memories of previous beliefs and impressions in light of new experience. If some information leads them to form a particular impression of some people, they will tend to think that they had that impression all along, even if their previous judgment were in fact the opposite. Note that all of these mental processes can happen in events that are not supernatural in nature (such as much religious belief) but the case seems to be made that these things are amplified when they are applied to supernatural concepts and various types of belief systems.

Pascal Boyer brings up a good example (in *Religion Explained*, 2001):

“A person brought up in a Kwaio environment is surrounded by people who seem to assume that there are ancestors around (consensus effect); she would tend to think that her own impressions are shared - for instance, that most people feel the way she does about a particular shameful action and the ancestors’ disapproval (potential false consensus); some of her representations about ancestors are self-generated, leading to good recall; this is also the case for religious specialists who must tell other people how to perform rituals and how to interact with ancestors, in effect improvising all sorts of new details about these agents (generation effect); whether a certain event was directly perceived or reported might become uncertain after a while (memory illusion, source monitoring defects); once she assumes that ancestors do intervene in people’s affairs, occurrences that confirm this may become more salient than others, thereby lending some support to the original assumption (confirmation bias); and even if some definite prediction about the ancestors was refuted by experience, she might well revise her memories of her past beliefs (dissonance reduction).”

That last point in the above quote is a good example of how various cult groups can still preach the end of the world even when numerous dates given for this have come and gone with nothing happening. Far from their followers being disillusioned and disbanding, they, in fact, are even more committed to the faith.

An important point is that beliefs are not necessarily subjected to parts of the mind that weigh evidence and decide on the merit of the belief. Instead what seems to happen is that beliefs are passed around in the mental system and are, furthermore, passed around as fact. That leads us to wonder: **what actually happens in a mind to produce beliefs?** That is a fundamental question and yet it is the one that is least often asked. We have to distinguish between *implicit* processes of our inference systems on the one hand and our *explicit* or reflective representations on the other. What happens in the “mental basement” is not accessible and we are not aware of the processes involved. We also have to realize that what is contained in the explicit thought – what we usually call a “belief” – is very often an attempt to justify or explain the intuitions we have as a result of implicit processes in the mental basement. It is an *interpretation* of (or a report on) these intuitions. We also have to realize that the implicit representations are often handled by *several* inference systems, each of which has its own logic. The point is that each of these systems seems to deliver inferences that support the general, explicit interpretation but each of them does that for different reasons and in different situations. The idea is that the multiple inferences are on the whole *consistent* with the explicit interpretation. So if we say that someone “has” a belief, what that seems to mean (superficially) is that they can assent to a particular interpretation of how their minds work. Our explicit beliefs are often justifications for consistent intuitions delivered by specialized systems, away from conscious inspection. The real point here is that all inferences delivered by specific systems are *compatible* with an explicit interpretation but none of these systems actually handled the general, explicit question. And that leads to the point that our explicit beliefs are quite clearly a justification for consistent intuitions delivered by specialized systems,

away from conscious inspection. And yet, even with all this, when people talk about their belief systems, we often consider these explicit beliefs as produced exclusively by such explicit processes as considering evidence, weighing it, examining alternative explanations and then, finally, coming to a conclusion. So that is how we consider people's beliefs but that is not how we handle belief in general.

The dichotomy above might be from the idea that people seem to treat religious beliefs as somehow "different" or "special". For example, in general if someone says they believe someone came back from the dead, one would expect good evidence of this. However, if this is applied to the teacher-founder of one's religion (as it is, for example, with Jesus-the-Christ for Christians), there is not the same demand for evidence. Part of this is that with religion many concepts are accepted out of usage rather than out of conviction but, clearly, there must be a little more to it than this. We have to realize that specific versions of belief systems and religious notions would make no sense, they would have no effects at all, unless people already had all the cognitive equipment that helps them to build such concepts. (For example, some people think a visionary can create a new religion simply by exploiting "gullible" people. But, in fact, the visionary is really tapping into belief systems that all people are capable of building upon given the way our mental processes work. For example, you can tell someone that there are invisible ghosts floating around them who watch over them but unless the person you are telling this to has some prior disposition for concepts of invisible guardian-type beings, they will not be able to make sense of this kind of pronouncement in terms of coming to believe it.) As Pascal Boyer states (in *Religion Explained*), "the building of religious concepts requires mental systems and capacities that are there anyway, religious concepts or not. Religious morality users moral intuitions, religious notions of supernatural agents recruit our intuitions about agency in general, etc."

I think what we end up with is that we have a variety of mental systems that make use of the assumption that a given supernatural concept (such as God, or spirits, or whatever else) exists. And that leads into the other core question: **what is it that makes supernatural concepts more plausible?** The real key to understanding that question seems to be predicated upon the realization that our inference systems produce intuitions driven by relevance, that is, by the richness of inferences that can be derived from a particular premise. Specialized systems in our mind only tend to produce a limited set of intuitions, based on premises that are both least costly (they are for instance plausible) and richest in inferences (most helpful to us in making sense of things). Such systems automatically produce some interpretation on the basis of some premise, however tentative that premise (conjecture) may be. Also, in some cases those systems can produce *several* competing interpretations based on different premises. This is a key point here. The intuitive plausibility of a given idea becomes greater as more and more different systems produce intuitions compatible with that general interpretation. We also have to realize that people tend to adhere to the specific religious commitments of their community (including parents, peers, etc.) and ignore other variants as being largely irrelevant. However it is often the case that this does not really stem from a sort of religious "peer pressure" or that people just want to believe what the group believes, but rather that some concepts are very tightly connected to social interaction and, as such, it

is unlikely for just one person in a group to entertain the concept. This is part of the general procedure known as *social formation* and that ties in with *mythmaking*, two topics that are large areas of thought in themselves.

But then all of this really leads to a crucial question, and one near and dear to my heart: **why do some people believe and not others?** For example, if religion or just supernatural concepts in general can be described in terms of cognitive processes that are common to all human brains, why is it that nonbelievers can remain nonbelievers when such significant portions of societies around them are believers? Here I think, however, one fails to make a distinction. Non-believers are believers in a particular concept: that religious explanations are not needed. That is a type of belief. Even within a melting pot society like America, many religions compete for bookshelf space, airtime space, etc. and each might have various believers. Yet to each group, those who do not believe in the tenets of a given group are the non-believers. In other words, “non-believer” is a relative term. Yet there is definitely a difference, to a large extent, between those who are willing to entertain any sort of supernatural notion and those who are not willing to entertain such notions. The point I think that we have to realize is that religion (just like science) does not exist in the abstract for all practical purposes. These are cultural things; in other words, they are a domain of mental representations that happen to be entertained by a number of human minds. These cultural activities (science or religion) manifest as a large set of people with particular thought patterns, particular preconceptions, who do particular activities, who relate to a particular database of information that is stored in a particular type of literature, with a particular way of adding to, subtracting from, or modifying that database.

Religion and Evolution

Some people like to tie the emergence and subsequent development of religion as being part of the evolutionary process that led to the human mind. To some this ties into the notion of what is known as *evolutionary psychology*. Leda Cosmides and John Tooby, two prominent evolutionary psychologists, state:

“Evolutionary psychology is based on the recognition that the human brain consists of a large collection of functionally specialized computational devices that evolved to solve the adaptive problems regularly encountered by our hunter-gatherer ancestors. Because humans share a universal evolved architecture, all ordinary individuals reliably develop a distinctively human set of preferences, motives, shared conceptual frameworks, emotion programs, content-specific reasoning procedures, and specialized interpretation systems – programs that operate beneath the expressed cultural variability, and whose design constitute a precise definition of human nature.”

This comes from a descriptive statement of their work at the Center for Evolutionary Psychology at the University of California, Santa Barbara. This universally shared architecture that they talk about also leads to the notion of sections of the brain that make

up this architecture. Steve Pinker feels that the brain is broken up into certain specialized sections, which he talks about in his book *How the Mind Works* (1997). He refers to these as “mental modules”. His modules do not necessarily correspond to specific regions, *per se*. It can correspond to areas in the brain that are connected in some fashion. Thus, a few regions can be thought of as a single module. In this view the aspects of behavior that people exhibit stem from the interconnections between regions (modules), rather than the modules themselves. (This was something that was accepted quite some time ago, such as by those like Franz Joseph Gall who dealt in what was called *organology*, later to become *phrenology*. However, Gall did not really believe in or understand the interconnections between brain regions.) David Noelle from the Center of the Neural Basis of Cognition at the Carnegie Mellon University and the University of Pittsburgh says:

“Modern neuroscience has made it clear that the adult brain does contain functionally distinct circuits. As our understanding of the brain advances, however, we find that these circuits rarely map directly onto complex domains of human experience, such as ‘religion’ or ‘belief.’ Instead, we find circuits for more basic things, such as recognizing our location in space, predicting when something good is going to happen (e.g., when we will be rewarded), remembering events from our own lives, and keeping focused on our current goal. Complex aspects of behavior, like religious practices, arise from the interaction of these systems – not from any one module.”

Thus there are two sorts of views here: one is of relatively autonomous sub-units that make up the brain but the other is that of the interconnections between these sub-units. Steven Mithen, an archaeologist, feels that a critical phase of human evolution was when the mind (as a phenomenon of the brain) stopped being what he calls “Swiss army knife” in nature and rather began to display a sort of “cognitive fluidity”. In other words, the brain went from being more specialized to being less. He believes that this is when humans became more conceptual and more open to such things as religious belief. He talks about this in his book *The Prehistory of Mind: The Cognitive Origins of Art, Religion, and Science* (1996).

It is this notion of “believing in” things that comes to the focus of much research on the brain when talking about why and how people believe things. Michael Shermer feels that people as a general rule have a built-in tendency to believe in supernatural occurrences because of our evolutionary history. As he says, “We have lived in the modern world of science and technology for only a couple of hundred years, yet humanity has existed for a *couple of hundred thousand years*.” (*How We Believe*.) The idea being that most of the evolution of our brain and minds took place in the pre-scientific times. Shermer believes a similar idea to that of James Alcock – namely that of a *belief engine*. Both men seem to agree that this is some sort of component (or underlying structure) of the brain and mind that evolved over the course of time as a survival benefit. As Alcock said in the May/June 1995 issue of *Skeptical Inquirer*, in his article “The Belief Engine”:

“This belief engine selects information from the environment, shapes it, combines it with information from memory, and produces beliefs that are generally consistent with beliefs already held. This system is as capable of generating fallacious beliefs as it is of generating beliefs that are in line with truth. These beliefs guide future actions and, whether correct or erroneous, they may prove functional for the individual who holds them.”

Alcock centers more on the mind's ability to see causal links where none necessarily exist while Shermer tends to concentrate on pattern-seeking overall. The key that both men feel, however, is that the brain/mind is not necessarily concerned with truth in the belief engine. As Alcock says, “Concern for truth is a higher order acquired cognitive orientation that reflects an underlying philosophy which presupposes an objective reality that is not always perceived by our senses.” Shermer believes that the idea of the belief engine leaves us with two specific types of “thinking errors”, as he calls them, as well as types of thinking, called “hits”, that are not erroneous. He designates them as such:

- Type 1 Error: Believing a falsehood
- Type 2 Error: Rejecting a truth
- Type 1 Hit: Not believing a falsehood
- Type 2 Hit: Believing a truth

This sort of ties in to Alcock's causal argument. Shermer says, “We think magically because we have to think causally. We make Type 1 and 2 Errors because we need to make Type 1 and 2 Hits.” Others also believe in the idea of the modules and their interactions. For example, the neuroscientist Vilayanur Ramachandran, in 1997, made headlines when he proposed what came to be called a “god module” in the brain. What he felt was that how religious a person is (or how open to mystical and/or supernatural thinking) might depend on how “enhanced” a part of the brain's electrical circuitry becomes. As he says, “the neural substrate for religion and belief in God may partially involve circuitry in the temporal lobes, which is enhanced in some patients.” (This comes from his article “The Neural Basis of Religious Experience.”) This work is also supported by the work of the Canadian neuroscientist Michael Persinger who has induced “microseizures” in the brain that seem to stimulate “spiritual” and “supernatural” experiences. He calls them “temporal lobe transients.” This mainly comes from his book *Neuropsychological Bases of God Beliefs* (1987).

Some have even called religion a meme. This is the case, for example, with the zoologist Richard Dawkins (in *The Selfish Gene*, 1976) and the psychologist Susan J. Blackmore (in *The Meme Machine*, 1999). Others who have agreed with this are the mathematician Richard Brodie (*Virus of the Mind: The New Science of the Meme*, 1996) and the physicist Aaron Lynch (*Thought Contagion: How Belief Spreads Through Society*, 1996). The cognitive psychologist James Polichak has taken the meme view to task as have others in the field. Some have said it might even be in the genes. For example, Hans Eysenck, a British psychologist, and the American behavioral geneticist Thomas J. Bouchard, Jr. have stated that a genetic connection cannot be ruled out. However, most

researchers into this subject disagree with them on a genetic basis for belief or religion. The psychologist Nancy Segal has said that there may be some genetic basis, but only insofar as religious belief reflects certain “genetically based personality traits such as traditionalism and conformance to authority.”

Some see it as stemming strictly from environmental situations. For example, Bronislaw Malinowski (in *Magic, Science, and Religion* in 1954) wrote: “We find magic wherever the elements of chance and accident, and the emotional play between hope and fear have a wide and extensive range. We do not find magic wherever the pursuit is certain, reliable, and well under the control of rational methods and technological processes. Further, we find magic where the element of danger is conspicuous.” To a certain extent, according to some, this carried over into religious thought as well as the common concept of superstitions. Stuart Vyse, a psychologist, talks about this in his book *Believing in Magic: The Psychology of Superstition* (1997).

Cultural Examples

In Islam there is no God but God and yet many Muslims are terrified of *jinn* and *afreet*. In a similar fashion, many Christians are terrified of what they call *demons*.

In Haiti, they believe that a recently-deceased corpse is often subject to being stolen by witches. To counteract this, they bury their dead (sometimes) with a length of thread and an eyeless needle. They feel that these witches will spend centuries trying to thread the needle, apparently being too stupid to realize they cannot.

The shaman Batek of Malaysia believe that they can turn themselves into tigers with human heads and that this somehow makes them invisible. They can also fly about and are known as “were-tigers”.

The Zande people of Sudan believe very much in witches and other evil agents that cause localized calamities, such as a roof falling in at a certain time. This is very similar to the belief patterns of the Kwaio people in the Solomon Islands.

The Tamil people in Kalappur (India) believe that Shiva created all living things, including people, and gave them each a “headwriting”, an invisible inscription on the forehead that specifies the person’s character, tendencies and overall behavior. The particular mix of humors in a person’s body are a consequence of this headwriting and explain why different people act differently in similar circumstances.

The Buid people of Mondoro in the Philippines have religious activity that mainly consists in communicating and interacting with friendly spirits, and enlisting their help to combat other, dangerous spirits. This is achieved by mediumship. Several times a week, people gather together and start singing to attract their *lai* or personal spirit.

The Brahmans perform rituals to turn the soul of a dead person from a *pret*, a malevolent ghost, into a *pitṛ* or ancestor. It is a ritual cycle that extends over eleven days where the

Brahman gradually incorporates the substance of the deceased person, in particular the impurity of the dying process, into his own body.

The Cuna people of Panama pray in front of statuettes such that the statuettes become diviners of a sort, allowing a shaman to journey into a world beyond the living to retrieve lost souls.

Aymara people (of the Andes) believe that certain mountains are alive. They believe the mountains have extremities (like legs and arms) and that mountains can “bleed” and that they also need to “feed” – mainly on the meat of animals that have been sacrificed. Feeding the mountains is said to make the lands around it more fertile.

The pygmies of the Ituri forest say that the forest is a living thing, that it has a soul, and that it watches over them and is generous and helpful to those people who are obviously friendly and honest. The Uduk-speaking peoples of the Sudan believe that ebony trees can listen in on conversations of people who stand near the trees and can store conversations.

Mayotte islanders believe in possession by spirits that insist on drinking perfume and will in fact not leave a body until they have drunk from a bottle of cologne.

The Fang people (of Cameroon) believe that some people have an extra internal organ in the stomach called the *evur*. This extra organ allows some people to display great talents in areas that are otherwise outside of their normal experiences. This *evur*, however, is also used to explain negative traits. Some believe that the *evur*-people can attack others in an invisible fashion and drink their blood or just bring misfortune to them.

Many people in modern rural Greece believe in a series of demons and demonesses. Consider just a few: *daoútis*, a goat-devil that couples with flocks; *drákoí*, huge ogres who abduct young women; *fandásmata*, ethereal creatures that transform themselves into cattle, donkeys, goats; *gelloúdes*, female demons that eat young children; *gorgónes* or mermaids; *kallikántzaroi*, very ugly goblins with tail and horns; *monóvyza*, one-breasted giant women; *stríngla*, an old woman who transforms herself into an owl that drinks the blood of children; *vrykólakas*, a vampire whose flesh is not decayed and who generally comes back to haunt his own family; *neráides*, very beautiful dancers seen dancing in outlying places, who drive young men insane; *smerdáki*, a small demon that attacks flocks; the *lámies*, very beautiful females with only a few blemishes, like a cow’s foot or a goat’s horns.

One could argue that these variations are significant because of how people respond to them. For example, in 1978 it was estimated that about thirteen million Americans believed they had seen an Unidentified Flying Object of the “piloted-by-aliens” variety. By about 1990 that number was up to twenty-eight million. However, it would be wrong to just dismiss this figure out of hand. After all, in 1993, sixty-nine percent of all Americans believed in angels and thirty-two percent felt they had been contacted in some fashion by angels. And yet, even with these figures, people still tend to ridicule those who

claim to see UFOs but there is no ridicule for those who claim to see angels. So even within a culture, there can be more or less acceptance of certain belief systems without even considering going between cultures.

Conclusion

Many like to think about the origins of religion and the ways to do this are very different, usually depending upon the bias of the thinker or their area of study. For example, many of the thinkers on this subject are very functionalist. For example, Sigmund Freud, Émile Durkheim, and Karl Marx adopted functional views of religion. For them, one must show how religious beliefs operate, or function, beyond the level of intellectual asset, to satisfy other needs or conditions. This tended to bring each of them to a reductionist conclusion. Their attempt, in this case, is not so much to explain religion as to explain it away. This type of thinking is in contrast to that of, say, Mircea Eliade who preferred a more “humanistic” approach and explaining religion “on its own terms”. In some cases, people want to look at religion, and its origins, somewhat scientifically. In this guise we are either dealing with an experimental science that seeks laws or we are dealing with interpretive sciences that seek meaning. Even within this venue we have to realize that some theorists strongly prefer substantive definitions, which closely resemble the commonsense approach. They define religion in terms of the conceptual content, or the ideas, that religious people commit to and find important. Other theorists think this approach is just too restrictive and offer instead a more functional definition, as with some of the above mentioned thinkers on the subject. They leave the content - the ideas - of religion off to the side and define it solely in terms of how it operates in human life. They want to know what a religion does for an individual person psychologically or for a group socially. Less concerned with the actual substance of people’s beliefs or practices, they are inclined to describe religion, whatever its specific content, as that which provides support for a group or brings a sense of comfort or well-being to an individual.

We also have to realize that overarching “theories of religion”, no less than definitions of religion, may also be either functional or substantive in character. Theorists who advocate substantive approaches tend to explain religion intellectually, in terms of the ideas that motivate, move, and inspire people. They stress conscious human intention, emotion, and agency. Functional theorists, by contrast, strongly disagree. They think that though explanations certainly are good for things - for physical objects and natural processes - they are just as useful in understanding people. Functional theorists strive to look beneath or behind the conscious thoughts of religious people to find something deeper and hidden. They contend that there are underlying social structures or unnoticed psychological distresses which form the real roots of religious behavior.

Sometimes what matters in the contemplation of belief systems (even those that are “seemingly outrageous”), is not so much whether or not one finds them acceptable, credible, or even likely. What matters more (and what is usually more illuminating) is the possibility that someone in the past may have held such a belief or that someone in the present currently holds such a belief. The consequences of this merit study - even though one might suspect the belief to be absurd. Many are willing to accept guesses as fact and

wishful thinking as reality. Often people are willing to do this because of what we categorically label the “unexplained.”

Most people will claim to have experienced something that they cannot quite explain. The simple observation of this fact might help us understand our consuming interest in the unknown and in the belief systems that swirl around those unknowns. These are sort of the borderlands of experience, to use Mike Nash’s term. These are the territories where the known blurs into the unknown and fiction seems to mutate slowly into fact or where previously-held fact seems to slip away into fiction. We are buttressed in our thoughts of these borderlands because it seems that most answers suggest questions, most areas of science have anomalies, each history has its revisionists, and religions tend to have their schismatics and heretics. At the junction of the borderlands, reality and the unreal stand so close together that we are not always aware that we have moved from one “world” to another and thus our belief system is accepted as “reality” by us but as “fantasy” by others. It is the viewpoint that makes the difference. This notion also pays homage to the idea that many have: there is nowhere so mundane that cannot also be bizarre, nowhere so comprehensively explored that it cannot produce the unexpected. We can wander around a landscape of thought and concept, past nuance and intricacy, and revel in how the universe makes room for its details. Subtle and interesting patterns of thought live at the margin between order and disorder, flaunting complexity and simplicity seemingly in equal parts - though enduring contradiction - in the face of the flux that the human mind brings when it observes at the world that is ‘out there’.

However, we also have the problems of phenomena that are made up of wishful thinking, poor research, collective hallucination, expectation-induced, faulty memory, and misidentification. The study of strange phenomena that we choose to term paranormal or supernatural must sometimes be allied to study of the witnesses and an understanding of what they themselves believe. It has also been shown, time and time again, that even apparently respectable people will do odd things for publicity, fun, or to make some sort of point. In some cases it has been shown that otherwise normal and sensible people are capable of extreme actions and so we at least have to admit the possibility that hoaxes can be quite prevalent and we also have to admit that there are those who will predate upon others in terms of cultic behavior.

We have to realize that there is sometimes a lack of consensus, an absence of agreement, on what constitutes objective reality and that is definitely one of the keys to understanding what goes on in the borderlands. This is a type of “world” where precision and clarity can be treated as suspicious. There is always the temptation for believers and skeptics alike to bolster their cases by stating as fact what is only supposition, or make definite figures that can only be tentative. To a certain extent, we can take organized religion as just another manifestation of the borderlands of knowledge.

I had to leave this with an interesting quote by Vince Sarich, an anthropologist, on the distinction he made between theists, atheists, and agnostics. I think this can equally well apply to those concepts that one may not believe in but that others do. Sarich said the following:

“What difference does it, or can it, make? Who cares? Who should care? Indeed, who even should care about anyone else’s answer to that particular question? That answer will in no sense begin to define what feelings you will have in any particular situation, nor even more important, what actions you will take on behalf of those feelings. The fact is that you will have, indeed you must have, a belief system that has moral and ethical dimensions, while you may, or may not justify that belief system, implicitly or explicitly, in terms of a God or gods. I believe that gods exist to the extent that people believe in them. I believe that we created gods, not the other way around. But that doesn’t make God any less ‘real.’ Indeed, it makes God all the more powerful. So, yes, I believe in, and, maybe, to some extent fear, the God in your head, and all the gods in the heads of believers. They are real, omnipresent, and something approaching omnipotent.”

Within that passage is, I think, a fundamental point and that point is simply that concepts and beliefs can be “real” in the sense that people do truly believe in them.