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Essay Review

Rock Art in Darwin's Cathedral

Shamanism and the Ancient Mind: A Cognitive Approach to Archaeology by James L. Pearson. AltaMira Press, 2002; ISBN: 0759101558.

Darwin's Cathedral: Evolution, Religion, and the Nature of Society by David Sloan Wilson. University of Chicago Press, 2002; ISBN: 0226901343.

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The two books under review ask us to think about complementary aspects of religion: social group and symbolic order. In *Darwin's Cathedral* David Sloan Wilson examines religious beliefs as biological adaptations for group living; he writes for an intellectually sophisticated general audience. Writing for specialists—the literature review is a sure sign, James L. Pearson sets out to find the nature of rock art in *Shamanism and the Ancient Mind*. He considers rock art within a psycho-cultural framework that gives his argument general interest.

Wilson tackles religion head-on, arguing that it provides the bio-cultural cohesive force that binds individual humans into coherent groups that function as a single organism. He is thus updating an old metaphor—society as organism—by explicating it in terms of group selection, arguing that the causal structure of evolution forces us to regard human groups as unitary evolutionary actors.

Pearson's purview is more limited. He's not concerned about religion in general, nor about human society, nor even about evolution. He is interested in the symbolic and ritual proclivities of the human mind as it is revealed in the activities of a particular kind of religious specialist, the shaman. Still more specifically, he focuses on rock art, arguing that it is derived from shamanic visions which, in turn, follow patterns inherent in the visual nervous system.

On the question that most interests Wilson—the adaptive nature of religious groups, Pearson says nothing. But we can surmise that he would be less than satisfied. For, in the course of reviewing a century of archaeological thought and research Pearson argues that adaptive explanation cannot account for rock art. Where Wilson argues for groups and adaptation, Pearson argues for cognition and symbols. And that is what interests me, the disjunction between these books.

Unfortunately, these two arguments are so very different in their assumptions and texture that comparing them in a fruitful way is difficult. I find myself in a situation like that of a paleontologist who is trying to reconstruct a complete skull on the basis of an incomplete set of fragments. Thus I would like to begin my review by making some remarks about the brain.

A Meaningful Life in an Orderly World

Our big brains "need" culture in order properly to function. Anthropologist Clifford Geertz made such an argument in his 1973 *The Interpretation of Cultures* (pp. 55-83), while biologist E. O. Wilson has made it in the course of arguing for *Consilience* (1996, p. 225) among the sciences:

> There was not enough time for human heredity to cope with the vastness of new contingent possibilities revealed by high intelligence. . . . The arts filled the gap. Early humans invented them in an attempt to express and control through magic the abundance of the environment, the power of solidarity, and other forces in their lives that mattered most to survival and reproduction. The arts were the means by which these forces could be ritualized and expressed in a new, simulated reality. They drew consistency from their faithfulness to human nature, to the emotion-guided epigenetic rules—the algorithms of mental development.

Literary critic Joseph Carroll (1998, 2003) has been arguing that literature serves in just this fashion. Humans not only want more from life than food, drink, security, sex, and children, but we *need* more. We need a coherent scheme for the world that stretches to the edges of our capacity to experience that world. This is not the place to present detailed arguments, but I would like to consider a passage from Weston La Barre that I have found useful over the years.

Early in *The Ghost Dance*, he considers what happens under various conditions of deprivation. Consider this passage about Captain Joshua Slocum, who sailed around the world alone at the turn of the 20th Century (p. 53):

> Once in a South Atlantic gale, he double-reefed his mainsail and left a whole jib instead of laying-to, then set the vessel on course and went below, because of a severe illness. Looking out, he suddenly saw a tall bearded man, he thought at first a pirate, take over the wheel. This man gently refused Slocum's request to take down the sails and instead reassured the sick man he would pilot the boat safely through the storm. Next day Slocum found his boat ninety-three miles further along on a true course. That night the same red-capped and bearded man, who said he was the pilot of Columbus' Pinta, came again in a dream and told Slocum he would

reappear whenever needed.

La Barre goes on to cite similar experiences happening to other explorers and to people living in isolation, whether by choice, as in the case of religious meditation, or force, as in the case of prisoners being brainwashed. He also reviews studies of sensory deprivation in which subjects are isolated from the world and deprived of as much sensory input as is experimentally practical (cf. Heron 1967). After awhile subjects become disoriented and begin to hallucinate uncontrollably.

While one might be inclined to attribute a brainwashed prisoner's disorientation to justified fear for life and limb, this would not have been a factor for subjects in laboratory experiments. They were in no danger and their physical needs were attended to. Yet they slowly and surely lost their grip on reality. It would seem that the brain actively probes the world for input and, in the absence of such input, cannot maintain its functional stability.

La Barre (pp. 51 ff.) also discusses "cultural shock," such as that sometimes experienced by war brides brought back to America. These women have a secure home, but their ability to speak English is often very limited and they have culturally conditioned expectations that are often frustrated by patterns of American life. In consequence the wife may suffer a psychotic breakdown after a few months, with depression and paranoid hallucinations.

In this case, the mismatch between the beckoning brain and the answering world is not as extensive as in the case of sensory deprivation, nor does the breakdown come so quickly. The mismatch does not happen in the details of the sensorimotor interaction with the world, but at a higher level, one subject to extensive culture-specific patterning. The mismatch is at a level where religious narrative and symbolism can play a significant role in bringing coherence to the world.

One might speculate, with Steven Mithen (1999), that symbolically imposed order arises when hominid capacities emerged from the strictures of cognition specific to social, technical, and natural history domains. Mithen sees religion as a non-adaptive "spandrel of those ways of thinking that allow the development of more efficient foraging and social communication" (p. 160). To the contrary, I see religious symbolism as a way of imposing correspondences between domains so that their capacities can mix and mingle in a directed way. Of the many possible ways the capacities of one domain can be brought to bear on the problems of another, which do you choose? Symbolism solves that problem; without the symbolism, conceptual fluidity is more a source of confusion than adaptive power. Which, if either, of us is correct awaits a deeper understanding of how the brain works.

One of the fluid mind's most important strategies is to order the world by placing things, places, events, and processes in the world in correspondence with

human anatomy, physiology, and lifeways. As a recent example, consider these lines of poetry from the Preface of William Carlos Williams' modern epic, *Paterson* (p. 3):

> Yet there is
> no return: rolling up out of chaos,
> a nine months' wonder, the city
> the man, an identity – it can't be
> otherwise – an
> interpretation, both ways.

In the standard medieval terminology (Levy 1967), the man, Noah Faitoute Paterson, is the microcosm while the city is the macrocosm, Paterson, New Jersey. Man is the measure of all things. Williams then systematically develops this correspondence in a poem that spans five books over some 250 pages. He begins the first book thus:

> Paterson lies in the valley under the Passaic Falls
> its spent waters forming the outline of his back. He
> lies on his right side, head near the thunder
> of the waters filling his dreams!

This conceptual device is ubiquitous in human societies. The anthropological literature is replete with studies of microcosmic symbolism (e.g. Needham 1973). Claude Levi-Strauss's (1969) analysis of South American myths shows them to be built on elaborate patterns of micro/macrocosm correspondences. More recently, Mary Douglas (1999) has demonstrated that the book of Leviticus hinges on a correspondence between the body, the temple, and the world. At a more mundane level we have such usages as "*head* of state," "*body* politic," "*foot*hills," "river's *mouth*," and so forth. A recent school linguists, psychologists, and philosophers argues that body-centered metaphor is the lynchpin of abstract thought (e.g. Lakoff and Johnson 1999).

All of this, and more, is order which we impose on the world. The details vary from group to group, from culture to culture. This order is above and beyond obvious practical necessity and serves only the brain's need for order. It is in the context of that order that the brain can comfortably set about the practical necessities of life.

The symbol systems of even the simplest human society are very complex. We do not know when hominid culture first reached that level of complexity, nor how long it took to evolve from some originating moment. Did it take it 1,000 years, 10,000, 100,000, a million or more years? We don't know. The rock art that has attracted James Pearson's interest is some of the oldest evidence we have

of human symbolic activity; but we do not know whether it marks an early, middle, or late stage in this process.

Visions on Rocks

Pearson considers the rock art found at thousands of cave and cliff sites around the world, with some sites having hundreds or thousands of images. What do those images represent, who put them there, and why? If we could travel back in time, we could answer these questions through direct observation. As time travel is impossible, we must get at these questions indirectly, through inference based on things we can observe and processes we do understand.

Thus Pearson begins his book with a discussion of archaeological method, noting that American archaeologists of the early twentieth century focused on "locating, excavating, recording, and describing findings at individual sites" (p. 2). We thus have descriptions of the bone fragments, pot shards, weapons and tools, seeds, and so forth found at specific sites. Then the focus shifted toward establishing chronologies for the artifacts and sites, thus giving us the foundation for thinking about regional prehistories. This led to functional interpretations of artifacts in terms of the lifeways of ancient peoples. How did these people live their lives? What did they eat, what were their travel routes, how many lived at a site, and so forth. During the 1960s archaeologists began forging a New Archaeology interested in making demographic and ecological arguments about the forces driving historical change. These thinkers, however, were not interested in rock art. For it could not readily be interpreted in the adaptationist terms they favored.

Which is not to say that no one had been interested in rock art. On the contrary, many have been fascinated by rock art since the first major discoveries in the caves of Altamira in the late nineteenth century. But it is only relatively recently that the subject has been intellectually respectable. Various approaches were pursed in explicating the art: "art for art's sake, totemic, hunting and fertility magic, and modern structuralist theories" (p. 44). André Leroi-Gourhan is the major proponent of structuralist analysis: he treated displays as coherent multi-image compositions rather than as a miscellaneous collection of individual images. He analyzed the distribution of image types and argued that they reflected the mythical universe of people capable of fully human thought. Then, starting in the early 1980s, David Lewis-Williams began arguing that "the painted motifs referred to the supernatural visions and experiences that medicine men received while in altered states of consciousness" (p. 49). Why would anyone think that?

There had been quite a bit of research on hallucinations in general, and drug-induced hallucinations in particular, back in the 1960s and 1970s (cf. Siegel and West 1975). One of the observations that emerged from this literature is that

hallucinatory "trips" typically go through three phases. In the first of these phases imagery is dominated by geometric forms of various kinds, such as grids, spirals, and zigzags. The second phase consists of "culturally meaningful images, perceived as recognizable shapes of people, animals, and monsters" (p. 88). During the third phase image types from the first two phases become blended together.

The geometric forms of the first and third phases seem to be derived from the inherent computational geometry of the nervous system. You do not, however, have to take psychoactive drugs to see these so-called entopic forms. You can evoke them by closing your eyes and gently applying pressure to your eyeballs. At some point you will begin to see brightly colored patterns which will shimmer and evolve as you maintain pressure. These are the kinds of geometric forms which appear in the first and third phases of trips.

Geometric forms quite similar to these entopic forms are prominent in rock art in widely separated areas–much of the original analysis was based on images found at sites in South African and the American West. Further, some rock art is known to have been created in historical times and there are references in the ethnographic literature from informants asserting that the images depict dreams (p. 86). While this certainly does not imply that all rock art has a similar origin, it does lend plausibility to the visionary case.

With this argument in mind, however provisional it may be, let us return to Weston La Barre's ideas. After having talked about culture shock and sensory deprivation he went on to observe (p. 60): "The fact that he dreams first forces on man the need to epistemologize." Our own view of dreams is so thoroughly psychologized that we can easily think of them as just something the mind/brain does. How do dreams appear to people who, lacking the explanatory and theoretical machinery of modern psychology and neuroscience, cannot psychologize them? Why think about dreams at all; why not simply forget about them? What structures and processes must a brain have if it is to remember both dream events and real events, to compare them, note the differences, and wonder about those differences? It seems to me that people lacking the interpretive buffering of this psychologized view of the world might well see dreams as genuine journeys to another realm. When were our ancestors able to do this?

I suggest that they were so doing at least 30,000 years ago, if not before, for that is the age of the rock art at Chauvet Cave in France (p. 79). To be sure, even if Pearson is correct, carving or painting rock art is not quite the same as talking about dreams as experiences in some other world, but the activities are in the same general domain. Given that the shaman actively induces visions through a combination of song, dance, and drugs, creating rock art would seem to be the more strenuous activity. It is through this activity that the shaman gains access to the dream world, one typically treated as being more real than the mundane world (cf. Pearson p. 108). He seeks active control rather than the mere recall of dreams.

This makes the shaman something of a metaphysician. To be sure, he is not a metaphysician in the style of Socrates, Descartes, Wittgenstein, Dennett, or Derrida, but his socially sanctioned ritual activity has a metaphysical dimension. He is the one who has mastered reality and so can travel to other worlds and there gain knowledge to help his tribesmen in the here and now. However they appear to us, shamans function as healers, weather-makers, story-tellers, and historians, and musicians to their own people (cf. Winkelman 1992). We might think of them as specializing in symbolic integrity, for it is their job to maintain the vitality of the symbol system that defines the order of the world.

This whole story, La Barre's and Pearson's, is conjectural, but the conjectures are about important matters that have yet to attract consensus explanations that are well-argued and documented by appropriate intellectual specialists. For that I reason I think they merit our further attention.

By contrast, this story is quite different from the one David Sloan Wilson tells about religion. He isn't interested in symbolism or ritual. He's interested in moral behavior and group formation. From his point of view "religious belief gives an authority to the system that it would not have as a purely secular institution" (p. 130). While he recognizes that all religious system are replete with symbolism, he sees it as a component of the psychological mechanisms through which moral behavior in inculcated in group members. Symbolism is merely instrumental. I do not, however, see that there is any deep conflict between the position that the human brain has a need for order that can be satisfied by religious symbolism and Wilson's argument about group behavior. On the contrary, my view might provide a way of explicitly accounting for the authority symbolism affords the moral order.

Secular Utility

Wilson begins by asserting that "the purpose of this book is to treat the organismic concept of religious groups as a serious scientific hypothesis. Organisms are a product of natural selection. . . . My purpose is to see if human groups in general, and religious groups in particular, qualify as organismic in this sense" (p. 1). He further asserts that "evolutionary theory explains how social groups can be like individuals in the harmony and coordination of their parts" (p. 2).

In these statements Wilson is raising two issues: social mechanism on the one hand, and descent on the other. Wilson's argument about the "harmony and coordination" of the practices of co-religionists is about social mechanisms. His argument that religious groups are organisms in the sense that they "are a product of natural selection" is about descent.

One can accept or reject Wilson's argument on mechanisms independently of his argument about descent. His argument about descent is that religion is the

result of innate mechanisms that arose through biological group selection and are maintained in part through biological group selection. His argument about descent only makes sense, however, if you accept his argument about social mechanisms.

I am going to accept his argument about social mechanism and reject his argument about descent. Before explaining that rejection I want briefly to review his account of mechanisms. His explanation is a functionalist one. Functionalist explanations involve causal loops "in which a structure or an activity is caused (indirectly) by its consequences" (Stinchcombe 1968, p. 58). Wilson thus argues that religious beliefs, practices, and institutions are caused by a specific consequence: people are able to lead better lives in religious groups than they would could outside the mutual aid and comfort of such groups. Religion exists because it has secular utility.

Wilson aims to establish that religious groups professing a wide variety of beliefs about the supernatural are organized on a common plan. Crudely put, they: (1) distinguish between group members and non-members and treat them differently, (2) are generous with members, and (3) punish members for moral lapses. The function of 1 is to ensure that religion's benefits, 2, stay within the group. Punishment ensures that group members do not abuse those benefits. This is the functional structure that allows religious groups to function as organismic units.

Wilson develops his argument through a pleasing series of case studies. In chapter two he reviews Evans-Pritchard on the Nuer, Turner on communitas and structure, and Malidoma Patrice Somé on the Dagara. Here he is concerned to demonstrate the egalitarian nature of primitive society and, in particular, the beliefs and practices the maintain that structure. In a later chapter (on forgiveness) he will devote some care to the leopard skin priests of the Nuer and will also consider Turnbull on the Mbuti.

He devotes the third chapter to John Calvin in Geneva—his major case study—and his fourth chapter is largely devoted to three examples: 1) water temples in Bali, 2) Judaism, 3) early Christianity. His account of early Christianity, which he bases on the work of Rodney Stark, is particularly striking in its argument that, in the chaotic and disease-ridden world of the Roman empire, close-knit Christian communities afforded a healthier life. Thus people converted to Christianity to secure those comforts for themselves and Christianity grew rapidly until the Roman Empire adopted it for its official faith. In chapter five Wilson introduces a Korean Christian Church based in Houston, continues his on-going argument with Rodney Stark's rational-choice theory of religion, and considers some other methodological issues, including identifying the appropriate adaptive unit and handling multiple streams of evidence. The penultimate chapter (six) is about forgiveness. He shows that it promotes group solidarity, but also that, in practice, forgiveness is not extended outside the group so generously as it

is inside the group. He has a particularly interesting discussion of differences among the four Gospels in which he follows Elizabeth Pagels in arguing that those differences reflect differences in the circumstances of the local congregations where each originated.

Throughout his discussion Wilson emphasizes that this is science in the making. His conclusions are provisional and there is much work to be done. Taken in this spirit I believe that his argument is powerful. But I have some reservations about the biological framework in which he situates his discussion of social mechanism.

Group Selection

Given that religion functions as Wilson says, why invoke biology to explain it? Religion varies tremendously from group to group in ways that are clearly cultural. Wilson freely admits that "culturally evolved mechanisms are absolutely required for human society to hang together above the level of face-to-face groups" (p. 119). During his discussion of Calvinism he even suggests that the "protestant Reformation may be regarded as a large number of social experiments with may failures for each success" (p. 122). He is thus recognizes that cultural mechanisms surely play a major role religious behavior and institutions. What is at issue is whether or not these behavior patterns require a specific and dedicated genetic basis or whether they have been knit together from behaviors common to the hominid behavioral tool kit.

Behavioral patterns flow from the operation of psychological mechanisms. Thus we must account for the existence of those psychological mechanisms if we are fully to account for the behavior. That is what Wilson asks biology to do, to account for the existence of some critical portion of the psychological mechanisms needed to sustain human life in groups larger than those typical of our primate relatives—I'm thinking of the argument about recursion and syntax that Hauser, Chomsky and Fitch (2002) make with respect to the biology of natural language. Since it is the unusually large size of human groups that must be explained, Wilson suggests that group selection is the way to explain those psychological mechanisms.

In so arguing Wilson is in a general line of thinking he traces back to Darwin. What we observe, in animals as well as humans, is that individuals often do things that benefit the group but that cost them individually. As an example Wilson considers a hypothetical group of birds where individuals will emit calls warning the group of predators but also attracting the predators attention to them as individuals. These individuals are likely to attract the attention of these predators and so are more likely to be killed than others in the group and less likely to reproduce. Conversely, individuals who never emit warning calls nonetheless benefit from the calls of those who emit warnings and are thus more likely to

reproduce. How can the genes favoring warning behavior reliably survive from one generation to another if individuals are less likely to reproduce than "free-loading" individuals?

Darwin's solution to this problem was to imagine that we have many groups and that those groups are in competition with one another. Groups containing altruistic individuals are more likely to survive than groups without them. Thus, we now seem to have a way of explaining how altruism can be inherited from one generation to another.

This solution, known as group selectionism, requires that the group be a real entity, rather than just some arbitrary collection of individuals. And that is where the problem is, figuring out the conditions in which this is possible. The problem was readily solved in the special cases of kin selection and reciprocal altruism, but a general solution has been more elusive.

The problem is that groups must be relatively isolated breeding entities, for that is the only way to keep genetic variance between groups large enough for selective forces to work on whole groups rather than directly on individuals (Boyd and Richerson 1985; Leigh 1999). There is little reason to believe that human groups are sufficiently isolated from one another for group selection to be effective. Let us consider one of his example, that of a Christian congregation serving Korean Americans in Houston, Texas (pp. 165 ff.). This congregation tends to serve Korean immigrants; their sons and daughters generally leave the congregation, finding it too constraining. The congregation thus requires a constant influx of Korean immigrants to maintain its membership. As long as the influx continues the congregation can maintain itself as a stable social group. That group does not maintain its long-term membership through breeding; it does not consist of lineages that are relatively isolated from other lineages. Thus we certainly cannot expect such a congregation to be a vehicle for maintaining a group-selected biological faculty.

While I am inclined to think that this particular congregation represents an extreme case, it is not clear to me that it is so extreme that we can dismiss it. I suspect that most congregations in contemporary America are somewhat like this. Many children born into the congregation will leave it in adulthood when they move to another region. Have human beings generally lived in the sort of breeding groups necessary to maintain a group-selected moral faculty? Wilson doesn't present any evidence that we do or have done so. Nor does it seem likely. The reproductive isolation requirements are fairly strict, and human population structure is relatively fluid (cf. Richerson and Boyd 1999, 2001). I am thus disinclined consider biological group selection an evolutionary source of the psychological mechanisms underlying human group behavior.

Nor, I should add, do I grant much significance to that disinclination. It is clear that humans have a considerable behavioral legacy from their animal forebearers and this legacy is surely active in the behaviors Wilson describes. The

respective roles of the genes and social learning in developing the underlying psychological mechanisms are obscure, as Wilson freely acknowledges. I am rather inclined to believe that we will not understand those roles until we have a deeper understanding of the mechanisms themselves: what neural structures are involved, what external cues do they sense, what actions can they initiate, how do they develop? Until these matters are more firmly in hand, trying to apportion adaptive credit between genes and learning seems premature.

The Symbolic Order Evolves

Wilson's final chapter is a plea for unifying systems, with evolutionary theory providing the unifying framework. Here he explicitly confronts the issue of symbolism, briefly summarizing Terrence Deacon's (1998) argument that symbolic behavior is both unique to and central to human social life—an idea he seems to have found a bit surprising. He goes on to offer some comments of his own (pp. 226-227):

> How can symbols be incorporated into evolutionary theories of social behavior? The first requirement is for them to have an effect on behaviors that in turn influence survival and reproduction. It is here that the concept of the sacred becomes joined to the concept of symbol. Sacred symbols command respect: they dictate behavior. To regard something as sacred is to subordinate oneself to it, to obey its demands. Sacred symbols organize the behavior of the people who regard them as sacred....[they] provide a mechanism for representing a moral system and putting it into action.

I think this is correct vis-à-vis his theory. If sacred symbols are necessary for putting the moral system into action, however, does that mean that the symbol system is evolutionarily prior to the moral system? Perhaps it is the psychological mechanisms for symbolic behavior that made it possible to knit our various innate social mechanisms into the type of moral system that Wilson has described.

Yet, if the brain needs a symbol system in order to maintain its operational stability, one might see that as a reason for living in close-knit social groups. Symbol systems can arise only in close-knit social groups, for the symbols are meaningful only as tokens in interactions with others. The shaman may journey to the other world alone, but he does so in full company of his local group, who are active participants in the ritual. What he sees and hears is for their benefit. The creatures he talks to, and who talk to him, belong to the mythology of his group. Thus, whatever the economic advantages of living in large groups, those groups also afford the mutual support for those symbol systems that bring order to the world. The order the brain seeks needs the validation of a group.

Just what is it, however, that these brains are validating among themselves?

Recall Pearson's shaman inscribing his visions on walls where others can see them. If Pearson is correct, then those visions are direct evidence of the brain's internal processes. In a sense, then, the brains in the shaman's community are contemplating themselves. What they think of as an another world is, in fact, their own minds as externalized and given visible form by the shaman. We are thus at or near the beginning of the long process whereby we humans have come to understand our minds.

Let us consider a later moment in this story, though one that happened long before John Calvin entered Geneva. Let us consider Plato's doctrine of Ideal Forms. Plato wondered how some thing, such as a bed, could exist when it presented so many different aspects, appearing large and small or variously tilted, and so forth. Thus in the *Theaetetus* (152d) Plato has Socrates teaching a secret doctrine of Protagoras:

> It declares that nothing is *one* thing just by itself, nor can you rightly call it by some definite name, nor even say it is of any definite sort. On the contrary, if you call it 'large,' it will be found to be also small, if 'heavy,' to be also light, and so an all through, because nothing is *one* thing or *some* thing or of any definite sort. All the things we are pleased to say 'are,' are really in process of becoming, as a result of movement and change and of blending one with another.

Plato inferred that there must be something behind those appearances holding them together. That something was the Ideal Form, of bedness, of treeness, of rockness, of goatness, and so on, which existed in a realm of Ideals.

This problem is one quite familiar to researchers in the cognitive sciences, only we do not think of it as having anything to do with the nature of beds, trees, rocks, or goats. Rather, we regard is as a problem about the nature of perception: How can the nervous system identify objects given the multiplicity of appearances they present to the eye? Many proposals have been made, some talking about general psychological processes while others are committed to particular neural realizations. In a similar fashion, many proposals have been made about the nature of dreams and visions. Where the shaman and his tribe talk of a higher reality, the Dream World, we talk of psychological processes and neural mechanisms. Where Plato and his students talked of a higher reality, the Ideal Forms, we talk of psychological processes and neural mechanisms.

From our point of view Plato and the shaman were in much the same business, though I suspect that Plato would have resented the comparison. They were contemplating the operations of the human mind. The historical process that evolved from the shaman and his world to Plato and his is mostly lost to us, though not so lost as the one that led from East African hominids to shamans. Even if we had a full historical record of those events, we could not explain how

or why they happened, not in satisfying fullness. And the same can be said for the events stretching between Plato and us. The historical record is better, but the mechanisms elude us. That is why we contemplate the shaman, his group, and their cathedral, to learn the nature of those nurturing mechanisms.

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