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THE AESTHETICS OF SURVIVAL

CREATURES WHOSE BEHAVIORS HELP THEM to live long enough to procreate, who also reproduce most effectively and most effectively care for their offspring, on average will get more offspring into the next generation than those whose behaviors are less supportive. Their offspring, in turn, equipped with the same instincts, are likely to behave similarly, and so will beget and raise yet another especially abundant contribution to the ensuing generation. The biologist's term for this process is "natural selection"; the characteristics of those individuals who exhibit such advantageous behaviors in the greatest degree are "selected for." Conversely, those characteristics of individuals that contribute less to survival and reproductive success tend to vanish over time; they are "selected against." Thus natural selection supports and enhances traits that confer advantages for survival and reproduction. This point is central to Darwin's mid-nineteenth-century thesis, which, challenged and modified over many decades, has been confirmed in its general stance and broad outlines and continues to be confirmed by a multitude of experiments and observations.[1]

There is now general agreement, however, that for most creatures evolution is not a smoothly continuous process but involves occasional episodes of "rapid" change interspersed with far longer periods of stasis.[2] But there is a good bit of contention about how we should interpret the terms "rapid" and "longer." This contention seems to me to be largely a matter of emphasis. Those who stress the rapidity of evolutionary change emphasize that in geologic time, change may be "instantaneous," by which is meant perhaps one hundred thousand years, perhaps no more than the thickness of an onion skin in fossil strata. Those who emphasize a gradual interpretation point out that such a rate of change presents no noticeable differences in the species at issue measured against all of recorded human history.[3] Whatever

the temporal emphasis, in everyday terms most creatures, including ourselves, have experienced enormously lengthy periods in which their genetic future is served by inherent characteristics, little changed from generation to generation, that have been whetted toward survival advantages over millennia, even aeons.[4] By such measures the period in which we have been elsewhere than Africa is brief; the period in which most of us have been other than hunters and gatherers is briefer still; the period in which we have been primarily urban dwellers is the blink of an eye.

But what initiates survival-advantageous behavior in the individual creature? In particular—since our interest here is the relationship of creatures, and especially ourselves, to the immediate physical environment—from whence arise the complex survival-advantageous responses of creatures to their surroundings?

Some responses result from individual cognitive processes: the creature acquires ideas about the environment from parents or other adults of the species, from peers, or from individual experience. In the animal world Konrad Lorenz has studied early experiences that instill predilections retained throughout the creature's life; he has called this process imprinting. In Homo sapiens predilections resulting from early experience or instruction may drive elements of our behavior throughout our lives. "There is always one moment in childhood when the door opens and lets the future in,"[5] says Graham Greene, which we might amend to include many moments, many doors, and many versions of a future. Because of the context in which it was first or repeatedly experienced, a particular natural setting, a room, a sound, a smell, even certain architectural characteristics, may retain associations, may shape choices, throughout the life of an individual. Such associations, retained, examined, modified in greater or lesser degree, affect our most personal likes and dislikes; they are primary causes of individual taste.[6] When we say tastes differ, or there is no accounting for taste, we are probably referring to responses in this realm, responses that come from individual experience or instruction.

Other responses are common among compatriots in place and time: shared customs, forms, beliefs, associations and values, ways of reasoning, ways of prioritizing, and ways of building constitute the material that makes a culture cohere.[7] These characteristics too evolve through time, distinguishing a culture at one time from the "same" culture at another time.

These two realms of response—the individual and the culturally influenced—are important forces informing the behavior of our own species in present-day life; certainly the two realms together account for an enormous array of behaviors and thoughts we now manifest and ideas we utilize.

Some behaviors of all creatures, however, come neither from imparted knowledge, personal experience, nor enculturation. Some are in place at the moment the creature becomes an active individual being. The female of several varieties of wasp lays the fertilized egg in an underground nest and never returns. The young wasp, emerging at the proper time, lives a life identical to that of the parent, obviously without postpartum instruction. The cuckoo leaves its egg in the nest of another species; the chick, after hatching, immediately pushes the host's eggs from the nest, thereby securing all the nurturing attention of the host. This behavior is enacted at the beginning of life, generation after generation, with no postpartum instruction whatever — quite the opposite, in fact, since the surrogate parent is always of another species, whose behavior is not at all that of the cuckoo. Another type of genetically carried behavior appears later in the creature's life, and here again we can turn to the cuckoo for an example common to many higher animals: the cuckoo "knows" it is a cuckoo; when it becomes an adult, it mates only with other cuckoos. If this were not the case, there would be no new cuckoos to continue the story.

> The honeybee scout returns to the hive from a foraging expedition and "dances," rapidly crawling in a particular, fairly complex pattern over the honeycomb . . . , her motions monitored by the spectators through their sense of touch. Given only this information, a swarm of bees then flies out of the hive in the proper direction to the proper distance to a food supply they've never visited as effortlessly as if this was their daily, familiar commute from home to work.[8]

Such innate behaviors occasionally extend even into the realm of aesthetics:

> Given pencils and paints, chimps with considerable drive and deliberation make art that, though exclusively nonrepresentational as far as we can see, is thought presentable in some circles. Male bower birds decorate their nests guided by an aesthetic that resonates with ours; they regularly replace picked flowers, feathers, and fruit that are no longer fresh; their art evolves through the summer. Gibbons fling themselves balletically through the high forests, and chimps can be counted on to rock and roll at waterfalls and rainstorms. Chimps delight in resonant drumming, and gibbons in song.[9]

But are these decoratings and flingings and drummings really enacted automatically, or does the creature learn these behaviors from others of the species? It is hard to say in the specific behaviors described in the quotation. But even if experiments offered an answer, the question itself opens another issue. We have known for some time that in many creatures certain

characteristics arise from a combination of sources: there is a genetic program for learning built into the creature, and there is also some postpartum teaching-and-learning event that enacts the program. Lorenz's experiments document such teaching and learning as it is programmed to occur at certain times for certain creatures without, apparently, other restrictions; whatever happened to his creatures in the crucial time period was imprinted as a behavior. Programmed options available in other instances and for other creatures, however, may be much more closely controlled. The chaffinch, for example, does not automatically sing a finch's song when it becomes an adult—but it is programmed to learn that song and readily responds to singing lessons offered, also innately, by other chaffinches. But it responds only to a finch-song curriculum; no matter how extensively "taught," it will not learn the nightingale's tune.[10] This phenomenon—a behavior that must be taught and learned but for which a learning structure is lodged in the genetic material—is now termed biologically prepared learning.

What of Homo sapiens? Certain obviously innate behaviors are evident at the earliest stages of individual human life: "One does not learn to feel afraid or to cry any more than one learns to feel pain or to gasp for air. . . . Five emotions can be elicited at birth. . . . There is no evidence to suggest that feelings are necessarily preceded by a cognitive process."[11] Fear of falling, for example, does not appear to result from early imprinting, cognitive learning, or parent-imparted information, nor is it enculturated; it is found in earliest infant life and in all cultures.[12] It can be overcome by mental processes—the paratrooper or skydiver can override it in this way—but it does not just go away; it remains part of our being to such an extent that the term "ineradicable" is fully justified. There is good reason for its presence and persistence. Among creatures vulnerable to injury or death by falling, those who are innately careful where falls are likely improve their chances of reaching reproductive age. Their genetic line will, in that respect, be selected for. A fear-of-falling response perpetuates itself, as do all such useful innate predilections. Among characteristics that appear in us at a later stage in life the most obvious are copulative desire and ability. They appear in us as in other species at a predictable time and with an elaborate accompaniment of related behaviors; they appear without conscious formal adult or peer instruction and without cognitive reflection and are neither easily repressed nor easily modified by such means, as we now know too well. Of the third family of genetically dependent behaviors it now seems that we have a truly astonishing example: there is now some evidence that our urge to invent, learn, and develop language, and our ability to do so, may be determined and enabled by an extraordinarily extensive genetically carried program for the acquisition of linguistic ability.

We can thus identify three families of responses and behaviors built into the genetic material of many creatures, including ourselves: those immediately operative from the moment of the creature's appearance as an active individual being, those that occur spontaneously at a later time in life, and those that drive and shape biologically prepared learning.

In our species the range of such innate responses must be unusually extensive. This is not just a cavalier or anthropocentric view. Genetically programmed responses are largely determined by the limbic brain, whose evolution to unusual size in our species is now thought to predate the later enlargement of the cortex.[13] The responses shaped by Homo sapiens's limbic brain had to be extensive through harsh necessity, because they had to see us through aeons of early species life without the aid of much of the built-in defensive and offensive equipment that has helped other species. We have neither horns nor good claws, nor shell, nor effective fighting teeth, nor venom; we have no fur to protect us from the cold; we cannot move very far, or very fast; we are poor swimmers and we cannot fly at all. We are of modest size; we are poorly camouflaged. Our smell and hearing are marginal compared to those of many species; our sight is less acute than that of many birds of prey, and we lack some mechanisms of visual perception found in birds, insects, and fish. "Feeble and almost defenseless primates," Carl Sagan calls us.[14] The limbic brain has governed behaviors that have enabled us to cope despite this multitude of deficiencies. When we include all such immediately necessary behaviors, we have for our species an impressively large body of innate material. When we add to it an unknown number of innate predilections for genetically prepared learning, including those that lead us to invent and develop and utilize language, we have a massive body of innate material indeed.

But "innate predilections" is a cold and clumsy term for the complex activating mechanisms behind human intuitive behaviors. We can more simply say that the real motivators are pleasure and relief from discomfort. There is no reason to think that early Homo sapiens engaged in sexual activity knowing offspring would result; the behavior was undertaken for pleasure, as it still is. "Lust and other such feelings are natural selection's way of getting us to act as if we wanted lots of offspring and knew how to get them, whether or not we actually do."[15] But what of our behavior when confronted with conditions, suggested earlier, in which a fatal fall is a real possibility? There the issue is not exactly pleasure; it is more a matter of relief of discomfort. We are uncomfortable near such conditions; we step back from the cliff's edge because we feel a lot better away from that potentially fatal zone. Even when we test such fear, it remains as a protecting element. Ingestion combines the motivations: we eat and drink both to relieve discomfort and to obtain pleasure. We enact these and innumerable other

helpful behaviors without analytical examination; we behave in these ways because we want to. We have an inarticulate but insistent urge. We feel better when we obey it.

In a quite real sense, natural selection "designs" creatures over time by the harsh culling processes of evolution, favoring those whose innate preferences—whose "likes"—better the chances of a genetic future. It has "designed" us, in that same sense, to like certain conditions and experiences in preference to others.[16]

So the premise: in reflecting on the various settings and experiences of our lives, we should be able to find some fairly close matches between characteristics we like and characteristics that would have improved our chances of survival.

As recently as ten thousand years ago worldwide, and much more recently in most geographic regions, we depended on responses to the features of an environment made up of almost entirely natural material. It is not surprising that natural material can still stimulate similar responses in us; given our long generational cycle, it would be more surprising to find that we embody significantly different preferences over what is, evolutionarily, a brief span of time. But we are justified in thinking that similar responses may be stimulated by phenomena and artifacts fabricated by ourselves? Is it valid to speak of these as analogous to natural conditions?

Individual natural settings always differ from one another in some degree. No two groves, caves, meadows, or streams are exactly alike. Furthermore, Heraclitus long ago pointed out the inevitable change over time in any grove, cave, meadow, or stream. So the response-generating characteristics of any particular setting cannot be so specific as to be unique to that example at that moment—if they were, we would respond only to that specific place and time and would be unresponsive to the advantages or dangers of similar settings or even, for that matter, the same setting at a different moment or from a different viewpoint. Such a basis for intuitive survival response would be evolutionarily unworkable. The characteristics that drive our responses, then, must exist as images within us in some degree of abstraction.[17] We do not seek only a particular bend in a particular river at a particular never-to-be-repeated moment, as seen from an exact vantage point, and ignore all similar manifestations. Rather we must be attuned to the sound of rivers generally, the glistening character of light reflecting from them, the presence or absence of prey or predator in them or along their banks, the vegetation that edges them. We respond appropriately—with delight, interest, boredom, revulsion, or fear—to infinite permutations of such conditions. The image in us that stimulates our approach to any particular river, our sense that we like or dislike this place, that we find it beautiful or re-

pulsive—such an image must be in the nature of an archetypal abstraction. Any particular place at any moment will be a greater or lesser manifestation of this archetypal image; no particular place will uniquely manifest it. If this is the case, and it is hard to see how it can be otherwise, it must follow that the characteristics of the archetype may not be exclusive to nature. We are entitled to ask whether they may be found in artificial phenomena and artifacts as well. What would seem to count is not whether the image that presents itself to the senses is natural or artificial, but whether it adequately presents to those senses the characteristics of the archetypal image.[18]

I seek such archetypal characteristics in what I have called and will call settings, particular identifiable places of describable and limited extent, consisting of natural and artificial materials in any configuration or combination, but with emphasis on the fabricated component, the architectural component. I ask whether and to what degree archetypal characteristics with survival value can be discerned in settings, and especially architectural settings, of unusual appeal.

What is the point of doing so? Why should this be of any interest?

Over the years many theories have been put forward to promote or defend or explain particular characteristics of the settings in which we live. Those theories have never been accompanied by a clear chain of reasoning to support the claims of value made or implied for them. As an example, Leon Battista Alberti in the fifteenth century argued that architecture, and by implication town form, should build on principles of the ancient Greco-Roman architectural tradition; a century later Palladio argued much the same point. Both believed that adhering to such principles would have some positive value for the observer; neither showed how or why others should believe this. To take a completely different example, Frank Lloyd Wright in the twentieth century claimed that in his residential designs he had "destroyed the box," without saying why the world should value that achievement. It may well be that these or any of a hundred other such architectural characteristics are in some way meaningful to us; but if so, how and why? A survival-advantage approach in some cases may suggest answers to such questions. It may suggest ways to reframe some of the questions; it may suggest the value of linking discussions of some such architectural issues to the considerable body of theory and empirical investigation centered on human nature and human behavior. By such means it can, in fact, lead to observations about, among other things, both the Greco-Roman vocabulary and Wright's destruction of the box. But it can also move the discussion from the particular examples to general principles embodied in each, thereby pointing to creative new

interpretations of those principles, interpretations quite independent of the examples used to illustrate them.

This approach holds another promise: by its nature it should pertain to all members of our species. From a historical point of view we should be able to illustrate its principles in settings from vastly different times, geographies, and cultures, each with its own language and level of technical sophistication; we should find, in turn, that existing examples appeal to people from equally differing times, geographic origins, and cultures with different languages and levels of technical sophistications.[19] We might hope too that we could go beyond the extant, that applying this approach in new work might yield an equal catholicity of appeal.[20]

Others have suggested such a survival-advantage approach to the general question of sensory appeal. Nicholas Humphrey quotes from the Scottish philosopher Thomas Reid, who, in 1785—in a statement preceding Darwin's *Origin of Species* by more than seventy years—suggested that modern biologists,

> by a careful examination of the objects which Nature hath given this amiable quality [of beauty], . . . may perhaps discover some real excellence in the object, or at least some valuable purpose that is served by the effect it produces upon us. This instinctive sense of beauty, in different species of animals, may differ as much as the external sense of taste, and in each species be adapted to its manner of life.[21]

So too John Dewey in 1934, in *Art as Experience*, pursued the idea of primordial purpose behind the aesthetic experience:

> The nature of experience is determined by the essential conditions of life. While man is other than bird and beast, he shares basic vital functions with them and has to make the same basal adjustments if he is to continue the process of living. Having the same vital needs, man derives the means by which he breathes, moves, looks and listens, the very brain with which he coordinates his senses and his movements, from his animal forebears. . . .
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> . . . the one who sets out to theorize about the esthetic experience embodied . . . must begin with it in the raw.[22]

Marc-Antoine Laugier in the mid eighteenth century and Gottfried Semper in the mid nineteenth suggested that such an approach might be pertinent to architecture: Semper wrote, "I see myself forced to go back to the primitive conditions (*Urzustände*) of human society."[23] Most recently Michael Benedikt, addressing a somewhat different purpose, has considered

architecture as "re-creating, re-collecting, re-constructing and re-producing the structures of the vital settings and situations of our primeval past." He continues in words that deserve quoting:

> It is instructive to recall that all of Architecture, which we usually take to begin in earnest some nine thousand years B.C., represents no more than one five-hundredth of the time mammals have been extant. During this seminal period, the essential elements of advantage accorded by certain patterns—figures—of shelter construction and site selection were becoming a part of *all* living and surviving. . . . how many of what we take to be specifically modern problems emerge with general form intact from this unimaginably long terrestrial history. . . . Paths of pursuit, places of surveillance, concavities for shelter, locations of food; traps, strongholds, graves . . . these, like drought and flood, are ecological givens common to all living things. Given too, and simultaneously, are the significance of high places and low places, light places and dark places, near places and distant ones, of inside and outside, cold and warm. . . . The meanings of these places, far from "culturally assigned" or free for the invention, are givens for animals no less than people; givens, for all intents and purposes, no less reliable than any natural physical law.[24]

How do we explore further the given meanings of our surroundings?

If we are to have a good chance of survival success, we must be highly competent at four basic activities: ingestion, procreation, the securing of appropriate habitation, and exploration. The first two have a few architectural implications, but those of greatest interest to this book are really subsumed in the characteristics of the habitat. We come then, rather quickly, to the matter of securing appropriate habitation. That activity is architectural in its essence; appropriate habitation in its broadest interpretation is what architecture has always been entirely about. I am going to begin, then, by considering the key issue first: what must appropriate habitation for Homo sapiens provide? I will then turn to the less obvious but equally interesting question of the exploration of our environment, to see whether there are any architectural characteristics that may be germane to that behavior. Having got that far, I am going to change course a bit to reflect on some architectural manifestations of two conjoined characteristics that are fundamental to all four of our survival activities.