"Making Special": An Undescribed Human Universal and the Core of a Behavior of Art

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To the casual observer, the arts appear to be products of culture, not biology. Their forms differ widely from society to society, and societies vary in the value they attach to individual arts. Yet the fact that every society displays at least one of the practices that we commonly think of as art suggests that underlying the individual manifestations of different societies' arts may be a broader biologically endowed adaptive behavioral proclivity. Tooby and Cosmides (1990, 396) usefully distinguish between adaptations (such as aggression or infant attachment) and their manifestations, which may vary from context to context. Perhaps "art," properly understood, is a biological adaptation with different manifestations appearing in different contexts or cultures.

To date, however, the treatment of art by evolutionary theorists, even on the rare occasions when they acknowledge it as a noteworthy human activity, has been almost uniformly unsatisfying.[1] While many ignore art altogether, others (e.g., Harris 1989, xi) admit outright that art and music are "difficult to explain in terms of evolutionary processes."

The few behavioral theorists who have discussed art invariably consider it as associated with or arising from other behavioral or mental features, such as communication, play, display, exploration and curiosity, amusement and pleasure, creativity and innovation, transformation, the joy of recognition and discovery, the satisfaction of a need for order and unity, the resolution of tension, the emotion of wonder, the urge to explain, and the instinct for workmanship.

While each of these human proclivities no doubt shares some or all of its features with one or another specific instance of artistic behavior, I find each one inadequate to explain the human impulse to make and value the arts. None characterizes all instances of art and thus cannot be used as a common denominator. What is more, each proclivity is found in other *non*artistic manifestations, so that one is still led to ask what makes "artistic" communication, play, display, and so forth different from *non*artistic

communication, play, display, and exploration.[2] The usual evolutionary explanations of art at worst suggest that it has no reality in itself but is merely an offshoot or epiphenomenon of one or more antecedents;[3] at best, they still leave us wondering what is artistic about art.

Mistaken Emphases in Previous Evolutionary Explanations

The confusion inherent in the treatment (or lack of treatment) of art by evolutionary scientists derives, I believe, from tacit adherence to two erroneous or limited preconceptions.

"Art" As Fine and Rare

The first arises from the peculiar and anomalous concept of art that is held in the modern West, where, unlike in other societies, art is a superordinate category that may include visual art, music, dance—"the arts"—but characterizes only some works (some paintings, dances, poems) and not others. Also, uniquely in modern Western culture, art is considered to be inherently nonutilitarian, apprehended and appreciated apart from its use-value—in the terms of philosophy of art, by a special "disinterested faculty" (Osborne 1970).[4] In this view, art making (and even its recognition and appreciation) is confined to only an exclusive few, and it is abundantly evident that many people get along very well without it. While admitting that great works of art are in a mysterious way of obvious, even "necessary" significance and appeal, it remains "difficult" (as Harris noted) to find an evolutionary origin and function for something that—being made and revered by the few—is rare, elite, and by its own insistence removed from practical utility.

Although this view of art is entrenched, if tacitly, in most Westerners' thought, it is being increasingly challenged and shown to arise from features that characterize the historical socioeconomic and political configuration known as "modernity"—e.g., economic specialization, individualism, secularization, commodification, an emphasis on rationality (objectivity and analysis), efficiency, utility, and so forth. It is not applicable to premodern and traditional societies, where there is seldom if ever a concept or even a word "art" that remotely resembles the Western view. The sociohistorical

circumstances that gave rise to "art" in the Western sense certainly do not pertain to the environment in which hominids evolved the behavioral traits that characterize human species nature.

Once we recognize the limited and limiting status of the Western concept of art, we can look anew at its possible evolutionary origin and function. For while "fine art" in the Western sense is notably lacking in many non-Western societies (and, for that matter, in the lives of most Westerners), every human society engages in the practice and valuing of activities that seem in some way—even if that way seems initially difficult to define with precision—"art-like," *different from ordinary behavior*. While "art" as a word or concept may not exist outside the modern West, there are most certainly arts: making visual ornament and decoration, shaping and embellishing the environment, speaking poetically, engaging in song, music, dance, and performance. Indeed, while a few human groups may be relatively impoverished with regard to some or even most of these activities,[5] far more human societies willingly, even persistently, invest in them a remarkable amount of time, energy, and other resources. Western modernity might view the arts as "useless," but biologists, using the evolutionarily salient criteria of universality, energy investment, and pleasure, would have to concede that engaging with the arts—like eating, sleeping, sex, socializing, and parenting—is a fundamental and essential part of human nature.

Self-Interest as the Prime Evolutionary Determinant

The second reason I believe evolutionary theorists have treated the subject of art's origin and function inadequately arises from their too-exclusive adherence to the sociobiological theorem that individual self-interest is the driving force behind all human behavior—hence the assumption that the arts are *primarily* avenues for competitive display and that they evolved for this purpose.[6] While the arts can no doubt be used for competitive display (as can swimming, spitting, and logsplitting), there is no need to assume that this was their origin or is their sole function. Acceptance of the "bottom line" of self-interest need not preclude accepting that some behaviors have been selected for their contribution to cooperation, which may of course ultimately serve self-interest (e.g., Eibl-Eibesfeldt 1989a, 102).

If evolutionary theorists look anew at the evolutionary value and purpose of art, using different assumptions about the nature of art itself and questioning the pervasive primacy of self-interest in all evolutionary explanations, I believe they will better appreciate art's enduring importance in human individual and species life.

"Making Special"As the Core of a Behavior of Art: The Relationship with Play and Ritual

Evolutionary scientists have had as difficult a time as philosophers of art in trying to contrive a viable comprehensive yet usable definition of art. They usually reduce it to or equate it with other behaviors and consciously or unconsciously founder on the problem of showing how, say, artistic order or play is different from nonartistic order or play.

My studies of art in crosscultural and evolutionary perspective (Dissanayake 1988, 1992) have led me to identify what I believe is a distinctive universal human behavior that remains undescribed or inadequately acknowledged in the literature and that can serve as a meaningful common denominator of art in all times and places. I have termed this behavior "making special." Making special refers to the fact that humans, unlike other animals, intentionally shape, embellish, and otherwise fashion aspects of their world to make these more than ordinary.

Each of the arts can be viewed as ordinary behavior made special (or extra-ordinary). This is easy to see in dance, poetry, and song. In dance, ordinary bodily movements of everyday life are exaggerated, patterned, embellished, repeated—made special. In poetry, the usual syntactic and semantic aspects of everyday spoken language are patterned (by means of rhythmic meter, rhyme, alliteration, and assonance), inverted, exaggerated (using special vocabulary and unusual metaphorical analogies), and repeated (e.g., in refrains)—made special. In song, the prosodic (intonational and emotional) aspects of everyday language—the ups and downs of pitch, pauses or rests, stresses or accents, crescendos and diminuendos of dynamics, accelerandos and rallentandos of tempo—are exaggerated (lengthened and otherwise emphasized), patterned, repeated, varied, and so forth—made special. In the visual arts, ordinary objects like the human body,

the natural surroundings, and common artifacts are made special by cultural shaping and elaboration to make them more than ordinary.

It may at first seem as if making special has no more claim to serve as the core of a behavior of art than the other behaviors or mental predispositions that are usually suggested, such as those listed at the beginning of this essay. Yet there are several reasons why I find it to be an improvement.

1. Even though not all instances of making special may be art, all art is an instance of making special. This cannot be said about the other characteristics that evolutionists associate with art—i.e., not all art is a kind or instance of play, display, or scenario-building; neither is all art communicative, pleasurable, creative, transformational, ordered and unified, or tension-resolving; nor is it always the result of skilled workmanship, exploration, explanation, discovery, or wonder.
2. Making special, as I see it, characterizes only two other kinds of human behavior: play and ritual. These, like art, have seemed to lie outside the explanatory pale of functional behaviors such as courtship, mating, parenting, subsistence acquisition, aggression, and so forth.

Resemblances between play and art or ritual and art have often been noted. Like play, art often is characterized by novelty and unpredictability, surprise, ambiguity, fantasy, and make-believe; both are self-rewarding, performed for their own sake. Like ritual, art provides a form for feelings; it is generally compelling, capturing attention and arousing strong emotion; both ritual and art may condense or conflate several meanings in one feature or symbol. Yet despite these similarities, and while the line may be sometimes hard to draw, I do not believe that art can be reduced to either play or ritual as some have suggested.[7] The important ingredient that all three behaviors share (and which gives them a family resemblance) is their being outside ordinary behavior or ordinary life. In this extra-ordinary realm, events or objects are recognized as being special or are deliberately made special.

Both play and ritual, it has been found, have utility and give reproductive advantage. Play allows young animals in a protected or "not for real" arena to develop practical and social skills that can be used later, in

adulthood; ritualized behaviors formalize, stylize, and emphasize ordinary attributes that thereby acquire a secondary communicative function and smooth the conduct of social life. Insofar as art shares features with play and ritual, similar selective value has been suggested for it.[8]

"Making Special" As Message-Reinforcement in Humans and Other Animals

I propose that the ability to recognize specialness and deliberately to make special is a human universal that has not heretofore been described.[9] I do not believe that it can be reduced to other proposed human universals such as, for example, Morris's (1967) "neophilia," Wilson's (1978) "mythopoetic drive," Lopreato's (1984) "desire for new experience" or "creative impetus," or Alexander's (1989) "scenario-building." Nor do I believe that it can be equated solely, as many have done, with what appear to be art-like phenomena in nonhuman animals—e.g., play, display, or ritualization.

The usual selective advantage posited for art-like behavior in animals and, by extension, art in humans boils down to what has been called "enhancement of communication" (Alland 1977; Eibl-Eibesfeldt 1989a, 1989b; Tiger and Fox 1971; Wilson 1978), display (Eibl-Eibesfeldt 1989a, Harris 1990), or, more specifically, "message reinforcement" (Coe 1992; Eibl-Eibesfeldt 1989a, 1989b; Geist 1978)—drawing or guiding attention to features that advertise or promote individual fitness: "See how desirable I am; how vital, strong, potent, comely, wealthy"; "See how tough I am: Don't mess with me"; "See what a powerful clan I belong to"; "See my irresistible childbearing and nurturing equipment." It is not to be denied that in every human society individuals make themselves and their possessions special in order to transmit just such messages.

In other animals, also, body and behavior made special are important features of ritualized displays that directly serve individual reproductive interests: they advertise territory and the command of other resources; they attract and persuade sexual partners; they facilitate and synchronize mating. The melodic elaboration of bird song, the courtship dances of sandhill cranes, the decorated bowers of bowerbirds, the astonishing visual displays

of birds of paradise or peacocks are all analogous to human behaviors that involve the arts.[10]

Hence it is wholly understandable that evolutionary scientists, beginning with Darwin, have attributed the selective value of the arts directly to reproductive advantage.[11] This is fine, as far as it goes, but I claim it is only part of the story. Deliberate "making special" (as opposed to instinctively decorating a bower or warbling an inherited species courtship or territorial song) is a specifically human behavior, and I will argue that in addition to contributing to the competitive reproductive advantages of individuals as in other animal species, the selective advantage of making special resides in and reflects specifically human species characteristics. The messages that are reinforced by the arts, and the tendency to reinforce or make special these messages, promote communality and one-heartedness, and this has, I claim, given them additional human selective value.

Making Special As a Primary Not Secondary Behavior

To make my case, I will next describe how making special as the core of a behavior of art could have arisen and persisted, not as an epiphenomenon of other behavior but as a positive and primary motivation in its own right.

Earlier I described making special as intentional shaping, embellishing, and otherwise fashioning aspects of the world to make these more than ordinary, and I pointed out that in play and ritual a "special" realm is acknowledged that is outside the everyday strictures of functional subsistence behaviors (eating, mating, parenting, and so forth).

Other animals, of course, play and exhibit ritualized behaviors. One can certainly see in animal play and ritualizations elements of the behavioral proclivity in humans that I call making special—the ritualized behaviors of cranes, bowerbirds, and others described earlier come quickly to mind, as does the playing with painting materials that apes and even captive elephants or dolphins have been found to enjoy and to do without extrinsic reward (Morris 1962, Gucwa and Ehmann 1985, Henley 1992, Lenain 1990). Other animals also can distinguish between the ordinary and extra-ordinary (in the

sense of what is normal and abnormal, neutral and extreme, requiring alertness or at least attention).

One can assume that early hominids, like other primates, engaged in play and ritualized behaviors and like other animals could distinguish between the ordinary and extra-ordinary. As early as 250,000 B.P. we find exotic fossils and minerals in human occupation sites, brought there from far away presumably because they appeared striking or unusual.[12] This collecting of artifacts may be not unlike the activities of jackdaws and packrats who accumulate or pick up shiny or otherwise attractive objects.

However, at some point, one can assume deliberate aesthetic use of natural materials—e.g. the application of red ochre and other pigments, even if initially used for utilitarian tanning,[13] surely began to be used for making bodies and objects special. The early Aurignacian use of beads made from exotic and rare shells and stones (White 1989a, 1989b) attests to making special as in necklaces and decorated garments at least from 35,000 B.P. We can only conjecture that the making special of body movements, language, and vocal intonation in dance, poetry, and song developed at least along with body decoration and probably appeared earlier.[14]

An awareness of extra-ordinariness or "specialness" would have been potentially available to serve a co-evolving human behavioral tendency, which I will call, along with Joseph Lopreato, an "imperative to act."[15] In circumstances of anxiety or periods of transition between one state and another, humans, unlike other animals (who simply fight, flee, or freeze), have a tendency to *do something*. The greater powers of human memory and foresight permit deliberate and intentional attempts to affect the outcome of uncertain or troubling circumstances.

I suggest that we can trace the motivation for a behavior of making special to the very appropriation from nature of the material conditions of life—food, drink, shelter—what Marx called the "means of subsistence." Handaxes, spearthrowers, digging sticks, fire, and clothing were products of the earliest technology, the cultural tools that enabled humans to better control the aspects of nature on which material production depended, so that they could survive. In the traditional materialist view of Marx, Marvin Harris, and others, art—along with religion, science, and politics—is

assigned to the "structure" or "superstructure" that is dependent on the material subsistence base or "infrastructure."

However, I suggest on the basis of knowledge of premodern groups that we can observe today that at some point in human evolution making special itself became part of the technology of appropriation—that is, means of *enhancement* (making special) were allied to the means of production *in order to make them work more effectively.*[16] For example, procuring food is not taken lightly. Group members have strong feelings about the success of their venture so that in hunting societies, "behavior made special" is as much a part of preparation for a hunt as readying spears or arrows. Before a hunt, hunters may fast, pray, bathe, and obey food or sex taboos; they may wear special adornment; they may perform special rites concerning their tools or weapons, or mark these with special symbols in addition to sharpening them or treating them with poison. This control of behavior and emotions mimics the control necessary to achieve a desired goal. Special practices such as spells or use of charms may also be carried out during the hunt, as well as concluding rites after success, such as propitiation and appeasement of the prey animal's spirit.

In other words, the appropriation from nature of the means of subsistence often includes psychological along with technological components; the "nature" that requires cultural control includes human behavior and feeling as well as the physical environment (Dissanayake 1992). Where materialist thought is inadequate, I believe, is in its failure to acknowledge that *means of enhancement* (i.e., the control of human behavior and emotion outlined above) are frequently if not always intrinsic to the control of the means of production.

The means of enhancement do not necessarily have to be "aesthetic." For example, fasting, observing taboos, or sacrificing are certainly "special" or extra-ordinary behaviors even though they are not inherently artistic. Yet as extra-ordinary behaviors meant to serve important ends, they tend to be the occasion for ritual and artistic control and elaboration in word, gesture, and visual presentation.

Indeed, the artifices and practices that may arise from the human creature's imperative to act—its inherent efforts to deal with (to control) the uncertainties of its world[17]—tend also to be inherently and frequently what

we call "aesthetic" or artistic. Divining rods are incised with a pattern; childbirth or burial is attended with chanting, special sounds and words, or rhythmic body movement. These events may be enhanced with special personal adornment or use of objects that are themselves decorated and applied in formally shaped ways. Again, that is to say, humans not only recognize the special but deliberately set out to make things special.

Not surprisingly, to an evolutionist, the desire or need to make special has been throughout human history primarily expressed in the service of abiding human concerns—ones that engage our feelings in the most profound ways.[18] The principal evolutionary context for the origin and the development of the arts (the individual manifestations of the adaptive behavioral complex of making special, as per Tooby and Cosmides, see above) appears to have been in activities concerned with survival: objects and activities that were part of ceremonies having to do with important material and social transitions such as birth, puberty, courtship, marriage, and death; finding food, securing abundance, ensuring fertility of women and of the earth, curing the sick, going to war or resolving conflict, and so forth.

I see the selective value of making special, then, as residing in several effects of particular value to humans (in addition to the oft-noted reproductive advantages to individuals of competitive display of their comeliness, vigor, wealth, and status to others).

1. The control inherent in making special is therapeutic to individuals in that it provides something to do in uncertain or troubling circumstances and gives the psychological illusion, if not always the actual reality, of coping (Kalma 1986).
2. Making special those objects and activities (e.g., tools, weapons, ceremonies) that have abiding human concern leads to their being treated with care and consideration, thus helping to ensure that they will be successfully achieved. As psychologically effective ways of enhancing the means of production, they promote actual success. Groups and individuals who do not bother to enhance the probability of achieving their serious and important goals will not prosper as well as those that do.
3. Of equal selective importance, the arts are everywhere used in multimedia group events or ritual ceremonies, themselves "something

special to do," which confer benefits to the social group as a whole and mean that any individual member in such a group will similarly prosper.[19] During human evolution, ceremonies made group knowledge more impressive and hence more compelling and memorable, helping to transmit vital information over generations (Pfeiffer 1982; Dissanayake 1988, 1992). The arts, particularly music, generally including synchronized movement and song, tend to unite people.

4. Additionally, insofar as ceremonies inculcate group values and promote agreement, cooperation, cohesiveness, and confidence, they also enhance survival. Working harmoniously in a common cause ensures as much as any other human attribute the welfare of individuals.

Aesthetic Making Special

In these two behavioral tendencies—the imperative to act and the ability not only to recognize specialness but to set out deliberately to make things special—humans differ from other animals. It is the behavioral tendency to make special that is, I claim, the human universal, rather than instances of displaying "art" as it is usually thought of by evolutionists influenced by modern Western intellectual culture.

Yet, as I have shown, making special frequently is what we would call aesthetic, and it is useful to try to distinguish aesthetic making special (or art) from nonaesthetic making special.

In ourselves, in our children, and presumably in early humans one can identify responses to protoaesthetic elements, features that inherently give perceptual, emotional, and cognitive pleasure and satisfaction in their own right. The reason that they are inherently pleasing and satisfying is probably because they indicate that something is wholesome and good—e.g., visual signs of health, youth, and vitality such as smoothness, glossiness, warm or true colors, cleanness, fineness, lack of blemish; vigor, precision, and comeliness of movement; sounds that are resonant, vivid, and powerful. In any modality, repetition, pattern, continuity, clarity, dexterity, elaboration or variation on a theme, contrast, balance, and proportion are appealing, presumably because they engage and satisfy cognitive faculties, indicating comprehension and mastery, hence security.[20]

When things are made special by means of the intentional and considered use of these protoaesthetic elements that provide sensuous notice and gratification, one can speak of aesthetic making special,[21] that is, of "art."

It is evident that my notion of making special departs from previous bioevolutionary explanations of art which tend to emphasize the importance of the message that is artfully conveyed (i.e., the content). Rather, I emphasize the artfulness, the inherent appeal, of the means used—the package. Usually people have chosen important messages to be made special, but these need not be enhanced; also there need be no content (symbolic or other) at all. The concept of making special, making artful or artfully making, allows us to regard "art" as a behavior rather than as the results (the objects, message, or content) of that behavior.[22]

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Notes

1. Twenty-four important books on human behavior and evolution written or edited by professional academic evolutionary scientists, one-third did not treat art or the arts at all and another third mentioned them only tangentially, in connection with other activities such as religion, entertainment, or symbol use. Only seven books (by five authors) expressly set out to address a possible selective value for art (Dissanayake, 1992, 9, 227-28).
2. For example, Wilson (1984, 75) notes that art "explores the unknown reaches of the mind." But so do science, philosophy, and shamanism. What is different about artistic exploration?
3. Festinger (1983) states outright that art is an "evolutionary peculiarity," a spinoff of other behaviors that promoted creativity.
4. Lumsden (1991) has even attempted to suggest a function for disinterested aesthetic appreciation, apparently unaware that such a faculty is not universal and has been proposed and accepted by only a minority in the West since the late eighteenth century.
5. Hunter-gatherers and other nomadic people who cannot carry large artifacts about with them often have highly developed poetic and dramatic traditions (Anderson 1990). Heider (1979, 45), speaking of the Dani of Papua New Guinea, remarks that they "rarely expend energy to add beauty to a thing," and Dubois (1944, 12) says of the people of Alor that their ceremonial practices are "slight and slovenly." Yet it is evident from their ethnographies that the Alor practice gong-playing, versification, and dancing with respect to the important social area of financial reciprocity, and the Dani engage in personal ornamentation, group dancing, and singing associated with the important social practice of ritualized warfare. In modern America the fine arts are also devalued—music and art are the first subjects to be dropped from schools when funding is precarious. In a bottom-line, efficiency-oriented society that values rationality and practicality, art (as elaboration and ornament) is a liability. At best, art in contemporary America is a commodity to be made for sale and acquisition: this is far from its original function.

6. Theorists who have found the arts to be a means of individual display include Eibl-Eibesfeldt (1989a, 1989b), Geist (1978), Harris (1989), and Wilson (1978). Diamond (1991), Low (1979), and Eibl-Eibesfeldt (1989a, 1989b) mention its role in sexual selection.
7. Play theories of art are commonly associated with Schiller (1795/1967), Spencer (1880-82), Freud (1908/1959), and Huizinga (1949), as well as being proposed by Morris (1962). Ritual is frequently posited as the origin of art by prehistorians and anthropologists insofar as they see art as arising as a sort of symbolmaking for the purpose of religious ritual. They do not of course consider human ritual ethologically (i.e., as it resembles animal ritualized behavior). However, see V. Turner 1983.
8. The same holds for Alexander's (1989) notion of scenario-building, which may have characteristics in common with some art, so that art is viewed by him within the broader category of scenario-building. However, unlike play and ritual, scenario-building may not involve specialness at all. Moreover, making special does not inevitably build a scenario (e.g., collecting unusual stones or fossils, putting flowers in one's hair, filing one's teeth, or otherwise sculpting one's body).
9. Geist (1979) mentions the attraction of rarity, novelty, and the extraordinary in attention fixation and guidance as in ungulate-coat color-patterns and notes that human visual artists use similar means in their work. Eibl-Eibesfeldt (1989a, 701) mentions "the need to form super signs." However neither expands the notion to the level of a human universal behavior of making special.
10. Pitcairn and Schleidt (1976) describe a dance/courtship ritual in the Medlpa of Mount Hagen, Papua New Guinea, where pair synchronization is achieved.
11. Darwin noted the association between *beauty* in the animal world and sexual selection. However, beauty is not, strictly speaking, the same thing as making special, and no longer is it deemed essential to a thing's being "art," as it was in Darwin's day, when the words were almost interchangeable.
12. In *What Is Art For?* (p. 96) I show an example of a piece of fossil coral which was transported to an occupation site by an early *sapiens* ca. 250,000 B.P. Examples from Neanderthal sites of other transported

curios (such as fossils, concretions, and pyrites) are described by Harrold (1989) and Hayden (1993).

13. Pieces of red ochre or hematite are found in human dwelling sites from 300,000 B.P. It has been suggested that these substances could have been used initially for the utilitarian purpose of tanning hides, but by 100,000 B.P. shaped ochre pencils indicate drawing or marking (Deacon 1989), and by the Upper Paleolithic the use of ochres and other pigments had increased dramatically. See also Hayden (1990, 1993). Additionally, there are many examples of tools, being made from exotic materials even though naturally occurring flint was more abundant and easier to work—e.g., flaked tools made from transported natural glass in 11,000-24,000 B.P. in Tasmania (Jones 1989).
14. Coe (1992) mentions deliberate cranial deformation occurring from 70,000 B.P. and intentional toothfiling and ablation during the Upper Paleolithic (see Trinkaus 1983 and others cited by Coe). When tattooing, scarification, and other mutilation (or sculpting) of the flesh began is of course not knowable.
15. See Lopreato (1984, 299), who claims that the impulse to do something about our innate needs is overwhelming, and that we express any strong emotion by action. Pareto (1935, 1089) writes: "Powerful sentiments are for the most part accompanied by certain acts that may have no direct relation to the sentiments but do satisfy a need for action," and Malinowski (1948, 60) says essentially the same thing.
16. Arnold Rubin (1989) viewed art as part of technology; his untimely death, before his ideas became widely known, is regrettable. Henry Mercer, the architect, polymath, and collector of American preindustrial tools, also considered the arts and religion as secondary "tools," by means of which human existence was made possible (see display at Mercer Museum, Doylestown, PA, USA). J. Z. Young (1978, 38) has claimed that the activities of religion, art, and music "are even *more important*, in the literal practical sense, than the more mundane ones that are the concern of politics, business, and industry." See also Malinowski (1949, 98-99): "An object, whether a cooking pot or a digging stick, a plate or a fireplace, has to be skillfully, lawfully, and reverently manipulated, since it is very often effective not merely by

technology, but also by customary or ethical regulation." While Malinowski does not specifically mention artistic shaping and elaboration, this may be implied.

17. The fundamental evolutionary importance for humans and other animals of reducing environmental uncertainty is well described by Kalma (1986).
18. It is only recently in the modern West that "artists" have felt that they can make "anything" or "everything" special.
19. See Ligon (1991) for examples of cooperation and reciprocity in birds and mammals.
20. Geist (1978, 236) recognizes that a sensation of "beauty" is a guide to value and is attributed to the removal of disorder and confusion. Eibl-Eibesfeldt (1989a) derives aesthetics from perceptual biases (inherent in higher vertebrates) for Gestalts and prototypes. Frederick Turner (1991), in a fascinating essay, goes so far as to claim that beauty is an objective reality in the universe and that the human aesthetic sense is an adaptive response to this inherent feature of the cosmos.
21. Biologists do not consider mind and body to be separate; "sensuous" notice and gratification implies perception, cognition, and emotion acting together as a unity.
22. It has not been usual in Western aesthetics to think of art as a behavior but, rather, as an object or instantiation of a "work" (a statue, a poem, a musical or dance performance), or an essence (the X-factor that makes something "true art," such as harmony, originality, taste, unity-in-variety, significant form, and so forth). Biologists and many psychologists tend to be concerned with the content that the work conveys.