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A NATURALISTIC AESTHETICS

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Like its parent field -- evolutionary psychology -- bioaesthetics has been primarily concerned with the adaptive results, the *ultimate* causative factors, of aesthetic or artistic behavior. Adaptive advantages or psychological benefits bestowed upon individuals differentially by art practice are said to contribute to reproductive success directly or indirectly. Such advantages typically include prestige, social power, mate acquisition, exercise or display of cognitive abilities, cultural transmission, or social unification and solidarity (see, e.g., Argyros 1989, 1991; Bedaux 1989; Brown and Greenhood 1991, and references in (d) below).

To date, bioaesthetics studies have focused primarily on four general questions:

a. "Aesthetic" preferences for sensory and cognitive features that are inherently attractive because they were ancestrally adaptive, indicating harm or benefit in other contexts.[1] Frightening or disturbing stimuli are included (as attention-getting devices [e.g., Aiken, *In Press*; Coss 1968]), as well as features that satisfy perceptual and cognitive predispositions (e.g., Gestalt principles of "good form" [Arnheim 1969]; see also Barrow 1995; Berlyne 1971; Eibl-Eibesfeldt 1989)].

b. Use by artists of motifs and themes in visual images and stories that address the vital interests of humans (e.g., prosperity, sexual and parental success, social reputation, detecting deceit, overcoming adversity) (e.g., Carroll 1995; Cooke 1987, 1992, 1995, etc.; Fox 1995; Nesse 1995) .

c. Ethological analogues to aesthetic behavior (e.g., play, ritual, responses to supernormal stimuli) (Bedaux 1996; Dissanayake 1988, 1992, *In prep.*; Eibl-Eibesfeldt 1989).

d. Phylogenetic origin and selective advantage of art practices (Barrow 1995; Coe 1992; Collins & Onians 1978; Constable 1997;[2] Dissanayake 1988, 1992, 1995, *In prep.*; Donald 1991; Eibl-Eibesfeldt 1989; Knight, Powers, and Watts 1995; Morris 1962).

Interesting and important as these studies have proved to be, bioaesthetics as it exists today is limited in its applicability to understanding art (both making and responding) *as these are experienced*. That is, the immediate motivations and satisfactions of the artmaker have not been given attention, nor have the feelings of the percipients -- i.e., their *aesthetic experience*. These motivations and satisfactions (feelings), and the relevant stimuli that produce them, are the *proximate* reasons for engaging in the arts -- the positive sense that the activity is personally rewarding. Addressing these reasons for the arts would make our field more relevant to philosophical aesthetics, which has been traditionally concerned with such questions as What is art? Why do we value it? What makes some works more successful (or "better") and others less so (or "worse")? Additionally (and perhaps more importantly), we would thereby acknowledge the complexity of emotional and cognitive factors in human experience, which "Darwinian Aesthetics" as presently practiced, like evolutionary psychology itself, seems unaware of.

All too often, bioaesthetics studies proceed as if when making or experiencing the arts we are only exercising ultimate adaptive preferences and behaviors. Yet this is

not so in other things that people typically do. To take obvious examples, people do not engage in sexual intercourse only because they wish to produce offspring nor do they eat chocolate eclairs primarily because they want to keep their caloric intake high -- even if, in an ultimate sense, this is why sex and fat/sweet foods are pleasurable. If aesthetic value and adaptive value are the same, a Shakespeare play is presumably no different from (or better than) a television soap opera that treats the same universally relevant themes, and Playboy centerfold pictures of delectable women are equivalent to Rembrandt's portraits of his well-loved Saskia or Hendrickje in bed. Such conclusions seem manifestly absurd, yet bioaesthetics, as presently practiced, provides no criteria for explaining -- in an aesthetic, rather than adaptive sense -- the characteristics that make some works, as a whole, generally received by their percipients as being in some way more meaningful, valuable, or -- let me say it -- *aesthetically superior* to others.[3]

This conference provides the opportunity for me to explore, among colleagues and in a preliminary way, the difficult question of proximate aesthetic value. Like any evolutionary view of the arts, my scheme is concerned to develop a *naturalistic* aesthetics, claiming that that a "good" or successful work (whether composed of material, sound, movement, words, or ideas) will address and satisfy human psychobiology as it evolved to live and prosper in the world. The ultimate evolutionary explanations are taken as given, but it remains to elucidate at least some of the features that make engagement with the arts pleasurable, desirable, and meaningful to individuals.

Features of a Naturalistic Aesthetics

I offer four criteria for assigning aesthetic quality ("aesthetic success") to an experience. The four are experienced synchronically as interrelated, although (in a diachronic sense) they successively accumulate or summate.[4]

1. **Accessibility coupled with strikingness**: The elements of the work will be comprehensible to human senses and interests, and will be generally considered particularly striking or fascinating -- either in their attractiveness or beauty, or in their intimations of humanly relevant uncertainty or even hazard.

It is such features that I claim have been to date the sole subject matter of bioaesthetics (and particurlarly "Darwinian Aesthetics") -- the sensory preferences and subject matter that appeal to adaptive interests. Yet, as such, I have elsewhere (Dissanayake 1995) claimed that these can be more usefully regarded as "*proto*aesthetic" features which in artful activities are further manipulated -- e.g., patterned and elaborated -- to create an aesthetic entity.

It is not surprising that when humans began to "artify," they made use of (a) emotionally captivating and cognitively interesting colors, shapes, and sounds that are relevant to vital interests and (b) subject matter of biologically-important concern (e.g., male-female relationships, life transitions, the body, feelings of hope or helplessness, and so forth). Movements that are strong, vigorous, and controlled or graceful and fluent are associated with vitality, youth, health, and competence, as are vibrant tones and entraining rhythms. Clear and true colors, firmness, and glossiness indicate freshness and ripeness. (The converse, signs of decay or disease, are disliked and considered to be ugly). Eye motifs, zigzag lines, and other cues of possible danger are also immediately compelling, as are intimations of violence and death.

Such features and themes in themselves provoke sensory and cognitive interest and often gratification. They are "good to look at" [listen to, move to, read about] -- subliminally (or overtly) associated with their wholesome and biologically useful or important referents, easily embodying them and provoking emotional response. Or their unnerving and disturbing associations, in the "not for real" context of an artwork, may provide *frissons* and the pleasurable relief of safety. Elements that are sensorily and cognitively boring or incomprehensible or emotionally irrelevant will not be aesthetically "accessible" or "striking."

What is considered "beautiful," not surprisingly, typically refers to protoaesthetic elements. Although it is customary to assert that beauty is "relative,"[5] a contemporary person will probably also consider "beautiful" the pieces of fossil coral that were carried by archaic *sapiens* from a source 120 miles distant (the Portlandian beds in Wiltshire) to a dwelling site (in present-day Swanscombe) 250,000 years ago (Oakley 1981).[6] These manuports (called "starrystone" in folk tradition) had no obvious use, but their allover pattern of "stars" is intricate and even dazzling -- visually and cognitively satisfying and pleasing.

Yet while accessibility rests upon vitally-relevant sensory and cognitive signals of things that were beneficial (or otherwise required attention) in other evolutionary choices (and strikingness emphasizes this accessibility), such signals are not in themselves art, but *ingredients* of art. They can and do exist in nonaesthetic contexts as well. That is, accessibility and even strikingness are necessary but not sufficient conditions for aesthetic quality.

In aesthetic experience, we not only notice and are attracted by naturally enticing and striking features that set apart an event or object from unenticing or ordinary events or objects. Something additional is done to the qualities, events, or objects: they are additionally patterned and exaggerated or otherwise emphasized so that they become more colorful or vivid, complex or elaborate, harmonious or unified, compelling or moving than their nonaesthetic counterparts.[7] A red fruit growing on a tree is less aesthetically striking than a red fruit placed carefully on an offering tray with other fruits or shiny leaves. Emphasis and intensification (through repetition, elaboration, extravagance, or special care) enhance accessibility -- additionally marking importance. Although from early infancy the temporal coordination of rhythms in voice and body stimulates interest and engagement, further improvisation and variation of these rhythms (within acceptable parameters) induces increased positive emotional response. Skill, which indicates competence and care, additionally attests to the seriousness of the maker's intentions. Rare or costly materials appeal because of their novelty, and the knowledge that they are difficult to obtain.

The quality of brilliance or dazzle, as responded to a quarter of a million years ago by archaic *sapiens*, is still accessible and striking. Sheen is valued by the Wahgi of Papua New Guinea (O'Hanlon 1989), who rub themselves with pork fat and shiny body paint. Costumed Kaluli dancers in the Southern Highlands of Papua New Guinea move so that they will shimmer like a waterfall (Schieffelin 1976). Although cattle-keeping Nilotes of the southern Sudan (e.g., Nuer, Dinka, Atuot, Mandari, Anuak, Pokot, and Maasai), like other pastoralist peoples, make no art objects and have no tradition of visual art, they respond protoaesthetically to dazzle when, in poetry and song, they

liken the coats of their display oxen to new grass, the sun, moon, gold, and an ivory bracelet (Coote 1992, 252-253) -- all desirable things, since for them glossiness indicates health and the state of being well-nourished. Their word for beauty is "dazzling array," meaning visually stimulating.

2. **Tangible Relevance**. The accessible and striking protoaesthetic elements of an aesthetically successful work will additionally have a tangible context in the particular lifeworld of the recipients -- i.e., clear connections to their vital interests, the important things relevant to satisfaction and survival in their environment.

Although the Aboriginal Yolngu of Australia have no systematic or explicit theory of aesthetics, they are clearly concerned in their *mardayin*, or sacred rites, to utilize protoaesthetic elements within a cultural context to produce effects on the senses by means of which the success of their work can be judged (Morphy 1992, 182). Since paintings are covered up or destroyed within hours or even minutes of completion, their power and beauty inhere to a great extent in the *activity* of painting, which has three stages: making the correct design (in basic outline), making an ancestrally powerful design (by painting it), and making a painting that enhances or beautifies the object it is painted on (187-188) -- the human body, as well as bark and wood.

Mere painting in itself is not enough, but requires additional brilliance or dazzle, achieved by added white or yellow dots, or by affixing white plant down to the painted surface. The visual effect of shimmer or scintillation (called *bir'yun*) engenders an emotional response (feelings of lightness, joy, happiness and power),[8] which Morphy likens to "the effect of heat on skin" rather than a consequence of aesthetic

contemplation and interpretation -- even though the semantic aspects of the design are experientially inseparable from its visual effect (193).

Because Yolngu (like people in other traditional societies, some of whom were mentioned in the examples above) consider people who are plump and sleek to be healthy and thus believe that fat is "good," it is not surprising that their criteria for artistic success (apart from correctness, which is assumed) include qualities of glistening brightness and clarity and that these are associated with ancestral power and beauty (Morphy 1992, 188-89). Yet their response is not "simply" to the feature of dazzle and its perhaps universal association with sheen and wellbeing, but additionally to its cultural association with ancestral presence and its attendant power, which embody health, joy, and happiness, hence sacredness. The protoaesthetic quality in itself is humanly accessible, attractive and striking, and therefore easily lends itself to added cultural meaning when further elaborated (or given an aesthetic context).

Similarly, Trobriand canoe prows are carved in intricately complex patterns which, when aesthetically successful, will dazzle beholders (Gell 1992, 44), thereby manifesting the culturally-relevant magical ability of weakening possible enemies as well as additionally enabling the canoe to travel fast, even to fly over the water.

The Nilotic/Sudanese songs that evoke brilliant things are about the central subject of that culture: cattle. The dazzling Yolngu designs and other components of their sacred arts (*mardayin)* refer to ancestors, the creators and sustainers of their world. In our own Western aesthetic tradition, a rose window evokes the order and splendor of the Christian world view. Participants and recipients find personal and social relevance -- cultural "meaning" -- in these activities or works.

Aesthetic entities may address preoccupations of a numerically-small individual culture (e.g., as in current Western art world concerns with the nature of representation) but, without instruction and familiarity, such specialized constraints will be tangibly relevant -- interesting and meaningful -- only to the group or subgroup; other individuals are not likely to respond. (Strangers to an art work in an unfamiliar tradition may respond to the almost universal accessibilty and strikingness of its protoaesthetic elements -- their pancultural attractiveness, such as true color, melodious sound, dazzle, exciting aural intensity -- but will not recognize the tangible relevance to the cultural tradition in which the work exists and therefore will not fully experience its emotional relevance).[9] Similarly, individual preoccupations (e.g., as in cryptic or maudlin private revelations) will have limited relevance to others.

3. **Evocative Resonance**. In addition to the context of tangible pertinence to vital cultural or individual interests, other associations or overtones to one's world or concerns may be evoked. There will be "more than meets the eye" -- a density of meaning embodied in the work and further revealed through its creator's or performer's artful and insightful manipulations. In Nilotic/Sudanese cattle poetry, for example, the scintillating things to which an ox is likened (see above) are themselves rich with associations beyond that of protoaesthetic dazzle. In warrior societies, tangibly relevant ancestral designs carved and painted on a shield invoke not only protoaesthetically fearsome and fascinating natural creatures -- e.g., praying mantids, bats -- but powerful beings that can protect a man in battle. In Gothic cathedrals of Europe, a rose window evokes more than rich color and visually satisfying pattern but manifold ideas and sensations associated with light -- e.g., illimitability, inaccessibility,

transfiguration. Such associations and revelations may well call upon and be embodied in panculturally-appealing ideas or motifs, but outsiders to the culture will probably not respond as deeply to them as insiders.

While the criterion of Tangible Relevance applies to culturally-relevant matters of subsistence and hence vital interest, the criterion of Evocative Resonance recognizes the nourishment and power of complex and less obvious (i.e., disguised, mysterious, subtle) references to individually or culturally important things. For example, Frankenstein's monster or the story of Dr. Jekyll and Mr. Hyde are protoaesthetically scary and fantastic, but, as conveyed by Mary Shelley and Robert L. Stevenson, additionally have inexhaustible implications -- evocative resonances -- for the human condition. In contrast, while the attention-grabbing special effects of contemporary videogames and action films may similarly ignite evolved protoaesthetic responses to excitement, activity, danger, and fantasy and may even seem tangibly relevant to the impuissant lives of the adolescents who partake of them, they do not resonate beyond their immediate shock value or adrenaline surge and are of lesser aesthetic value.

4. **Satisfying Fullness**. At the "highest" or greatest level of perceived aesthetic value, the respondent feels as if something has been accomplished by the work or activity, and a sense of completeness or sufficiency is felt -- rightness and even perfection. Not every aesthetic experience, of course, has supreme closure; such epiphanies may occur only once or twice in a lifetime. Yet in works that have the three other characteristics (accessibility with strikingness, tangible relevance, and evocative resonance) a high, if not sublime, degree of fulfillment is usually also felt. . Such fulfillments arise when life interests are touched, experiential depths are sounded, and

when the works that embody them have been constructed and composed with care and commitment, but -- I daresay -- not otherwise.

To illustrate the relationship between successful (satisfyingly full) aesthetic achievement and the care expended upon making and using art, I refer to a study (Smidt 1990:95) of Kominimung carvers (Papua New Guinea), whose designs on warriors' shields are drawn from an elaborate system of coded visual symbols of clan affinities and emblems (described and commented upon in Dutton 1994). Warriors protecting themselves with shields are not just human beings holding a plank adorned with designs that signal adaptively-relevant colors, forms, or even motifs.

To begin with, they are protected by a culturally "tangibly-relevant" ancestor of their clan depicted (with "evocative resonance") on the shield, with whom they identify and even "merge." (When holding the shield, its reverse upper half remains plain and unpainted and rests against the warrior's shoulder, as if he could almost literally get under his ancestor's skin).

Additionally, however, although a warrior's belief in the protective potency of his shield is a motivating factor in his success in combat, it is not simply the presence of the correct (relevant), evocatively resonant designs on the shield that convinces him of his power, but the evidence that they have been carved with skill and care. Dutton (1994) reminds us that because Kominimung men's lives depend on their shields, their making requires an intense devotion to getting both the design and the construction right. Thus the *carver's devotion* to the shieldbearer's protection is additionally intrinsic to its effectiveness and consequently to the work's aesthetically satisfying fullness.

According to one carver, Pita Mangal: "A woodcarver must concentrate, think well and be inspired. You must think hard which motif you want to cut into the wood. And you must feel this inside, in your heart." For the Kominimung, Dutton emphasizes, good carving is a matter of both technical mastery *and of feeling* -- of "meaning it" (Dutton 1994:5). The carved shields manifest and transmit the "emotional dispositions upon which society depends" -- in Radcliffe-Brown's (1948) phrase -- trust in ancestral protection and in the carver whose commitment and care are unmistakable, clearly evident in his workmanship.[10]

In most instances, the quality of emotionally-satisfying fullness usually does not inhere in a work's contribution to immediate survival, but will nevertheless be profoundly memorable. As such, it has a kind of *sufficiency* that distinguishes it from the temporary thrills of pastimes and diversions, which generally leave one empty, wanting another fix -- another videogame, another televised sports event, another porno film, another hand of cards, another amusing one-liner -- rather than replenished and transfigured as with full aesthetic responses, which can last a lifetime.

Psychologist Gerald Clore (1994) suggests that the felt intensity of an emotional response (to anything) may be directly correlated with the amount of cognitive restructuring that the experience engenders. He gives as examples the death of a spouse, learning that one's beloved has had an affair, or reinterpreting close personal relationships in therapy.[11] In each of these events, few aspects of one's life are untouched, so that much mental content must be restructured (Clore 1994, 391-92).

Such traumas seem quite different from experiences of the arts, but Clore points out that a musical or other performance, where we are sufficiently involved to generate

an elaborate model or expectancy of what is occurring and fully attend to it, progressively transforms its content, setting up and resolving ambiguities or problems and thereby restructuring the mental world of the perceiver. Although Clore includes experiences of jokes and sports events as examples along with music and drama, I was struck by his statement that we react not simply on the basis of the amount of raw stimulus change but that *one new fact* may alter what came before (Clore 1994, 393). Such possibility of transformation suggests careful planning or structuring on the part of the creator of the temporal sequence and close familiarity with the tradition being manipulated on the part of the percipient. As one traumatic event can require the restructuring of a lifetime of habit, one astutely-placed element (in an ongoing sequence) can restructure aesthetic expectation and create an intensity of feeling that surpasses one's reaction to successive gratuitous plot twists, special effects that just happen, or even a summating succession of thrills,.

Clore wonders whether intensity of feeling is the experience of cognitive reorganization itself, or the experience of physiological arousal triggered by such change. (I myself wonder whether the two are not, for all practical purposes, the same experience). And he contrasts the experience of profound disappointment with profound amazement, and finds the former affective and the latter nonaffective. Aesthetic amazement, however -- as in the example above of responding to a performance -- can be profoundly affective. Rilke's "You must change your life!" is occasioned by contemplating an archaic Greek marble torso, but occurs in the context of a web of experiences in life and art, as does the tribal initiate's life-changing experience during the amazing revelations of a carefully-structured dramatic ceremony.

Discussion

Artful elaboration arose during human evolution to draw attention to not just anything, but important life concerns that people rightly cared about (Dissanayake 1992). When Trobrianders believed that a garden would grow well only if it looked right (Gell 1992), they took special care and did not go hungry. Through especially affecting and interesting stories, cultures passed on moral precepts such as the value of reciprocity and respect for elders..

Looking "right" or being "especially" affecting and interesting implies that value judgments -- judgments of aesthetic quality -- are relevant. Some things are better and others worse, according to some aesthetic standard. This sort of appreciation requires more than simply being able to *see* (or hear). Unlike peahens who have automatic responses to the beautiful detailed elements of peacocks' tails in motion, humans must *learn* to appreciate the accessible and striking details -- in cattle colors or calligraphy -- especially as they are transformed in new and different contexts -- i.e., within a tradition.

In my naturalistic aesthetics scheme, above, considerations of aesthetic quality can apply at any of the first three levels just described, and the (generally rare) feeling of satisfying fullness will be inseparable from awareness of high quality. Judgments of adequacy, beauty, and interest will be almost automatic at the first level where elements instantly are appraised and are recognized as more or less appealing. At the second level, also, members of a culture will generally judge quickly how relevant the aesthetic work or occasion is to their particular tangible life concerns.

It is at the third level that assignments of quality will be most exacting and most dependent on variabilities of percipients, whose personal sensibilities and breadth or

depth of knowledge will affect how much is brought to bear on experiencing the resonances that inhere in the aesthetic event. As Dutton (1994, 4) has remarked, the world of art and its uses is one of making connections -- of marking and tracing relationships and influences. In premodern societies, however, the world of art was not separate from the world of life.

In an academic atmosphere of cultural and individual relativism (not to mention general philistinism in the broader society), the study of determinations of "quality" of aesthetic experiences is unfashionable, to say the least. Yet although the kinds of valued objects and activities vary from group to group, and ideas of what makes something "beautiful" or "right" (i.e., aesthetically successful) seem different in different cultures, and have to be learned, people in all societies do make such distinctions and evaluations. Indeed, taste and judgment are pervasive in human lives even though they have now become suspect, accused (by evolutionary psychologists as well as cultural relativists) of being cultivated only in order to display superiority.

Elitism and relativism cannot, however, be charges in ancestral or small-scale traditional societies, where standards are communally created and expressed. Inevitably, as societies become more stratified and diverse, ideas about what is beautiful and excellent also become stratified and diverse, and the arts of any one group may not be appreciated or even recognized by the others. Yet, as evolutionary psychologists, we are aware that learned criteria (of anything) nevertheless rest upon evolved universal predispositions, and thus should be within our explanatory scheme.

There is ample biological evidence of a capacity for judgments of quality, based upon the ability to make distinctions. All living things discern subtleties in sensory

features that are biologically important, such as the odor, texture, and taste of food. Like other animals, humans everywhere note careful distinctions in what most interests them.[12]

Even infants possess exquisite perceptual and emotional sensitivities to the smallest differences in shapes and proportions of human faces and facial expressions and to subtleties of human voices. This ability to note small, subtle differences is usually cited by evolutionary psychologists and cognitive scientists for its practical importance in later life -- such as recognizing the difference between "p" and "b" in a spoken word, or detecting possible signs of deception in a face or voice. But while these are obviously important adaptive skills, it is important to realize that the earliest exercising and developing of infants' discriminatory sensitivities -- e.g., detection of variations in frequency, intensity, duration, and temporal or spatial patterning of vocal and visual signals (Papousek & Papousek 1981, 171); expectancies of when these changes will occur; and crossmodal associations of these signals (Dissanayake, 1996) -- is in what are, essentially, *aesthetic contexts*, i.e., co-created improvisatory interactions with caretakers. Contributing initially to mother-infant bonding as well as to subsequent cognitive, linguistic, and socioemotional development, these capacities are also the precursors for experientially evocative, resonant, and richly satisfying aesthetic experiences.

Of the four criteria I have identified as affecting judgments of aesthetic value, the first two can be tested in particular instances, using what is known of biologically-relevant stimuli in the first instance, and what is known of a particular culture's way of life (manner or subsistence) and cultural beliefs in the second. At the third level, pan-

human insight is relevant, as in the first, although evocative resonance is additionally influenced by purely individual circumstances and will be the most individually variable. This third level is one where art criticism and bioaesthetics meet, as the sensitive and aware experiencer attempts to understand and articulate or convey the richness of an aesthetic event. The sense of satisfying fullness can be assessed only by the individual, although MRI and other imaging techniques would theoretically be able to detect recruitment of relevant areas of the brain in such experience. (At the present time, of course, we do not court aesthetic experiences while immobilized in MRI scanners, but this is a practical, not theoretical, objection).

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Notes

1. This is the subject matter of *soi-disant* "Darwinian Aesthetics," which has concentrated primarily on preferences for signs of health and fecundity in prospective mates, as well as for salubrious environments and nutritious food.

2. Constable's paper (a "pilot project") is noteworthy in that he considers and then rejects the usual proposed selective advantages for verse, and concludes that it appears to be a cultural form to which we are susceptible but for which we have no need (p. 198).

3. Indeed, Easterlin (1995) has questioned whether, as presently constituted, bioaesthetics can provide criteria for judgments of *value* of a work, rather than simply explanations of its adaptive characteristics.

4. I am indebted to Joel Schiff (*pers. comm.*) whose ideas and criticism have contributed much to the following formulation.

5. Turner (1991) is a notable exception, as is the approach of his study of beauty as a "precultural, neurobiological phenomenon." Turner's work, though biologically-based, is not conceived within the strict theoretical vocabulary of evolutionary psychology, and I do not have space here to discuss the ways in which our views are similar and different.

6. Around 400,000 BP, *Homo erectus* transported gem quality rock crystal from a distance, for unknown reasons (Oakley, *pers. comm.*).

7. When strikingness is deliberately added by intentional emphasis, the aesthetic enterprise begins.

8. An analogous progression from dark and dull to light and brilliant also occurs in the content of Yolngu songs and song sequences and in their dances, where a shimmering sense of movement again carries both emotional and cognitive meaning of conferred sacredness (197-98).

9. The Chinese art of writing, what we call calligraphy, is composed of marks in space that address the eye; yet like music, it unfolds in time; like dance, it develops a dynamic sequence of

movements, pulsating in rhythm, reflecting the writer's mood, sensibility, and personal character as well as conveying the meanings of the words it ultimately represents. Those who are familiar with this art and understand its varieties find in it infinite opportunity for appreciating complex associations and distinctions of quality. Yet Western observers see pretty much only well-made design-like brushstrokes.

10. Dutton finds the example of Kominimung shields to illustrate the "crucial social binding function of art," an interpretation with which I agree.

11. One can add the loss of one's home in a natural disaster, a serious injury, or the loss of employment.

12. Members of youth subgroups display meticulous visual discrimination of style in attire and possessions (see Crow 1996, 20). Young American boys who can barely read and write will know the distinguishing features of an amazing number of makes and models of cars. Sudanese keepers of cattle, mentioned previously, pay attention not only to the sheen of an ox's hide but to the animal's particular horn shape, body dimensions, and unique color configurations. Evans-Pritchard (1940, 41-44) noted ten principal color terms used by the Nuer, multiplied by at least twenty-seven further terms for configurations thereof. We have all heard about the many words that Eskimos use for types of snow, Bedouins for camels, and Scots for sheep.