



## Leonardo

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Source: *Leonardo*, Vol. 7, No. 3 (Summer, 1974), pp. 211-217

Published by: [The MIT Press](#)

Stable URL: <http://www.jstor.org/stable/1572893>

Accessed: 28/05/2011 14:43

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# A HYPOTHESIS OF THE EVOLUTION OF ART FROM PLAY

Ellen Dissanayake\*

**Abstract**—Observers of human behaviour have noticed similarities between art and play, e.g. both involve imagination, surprise, non-predictability and self-reward, and are considered biologically non-functional. Studies of these similarities led earlier philosophers and psychologists to construct hypotheses that attempted to explain art as arising from play during an individual's life span (that is to say, ontogenetically). Recent students of the subject agree, however, that these 'play theories' of art are inadequate to deal fully with the varieties of artistic activity.

The author examines similarities between art (including both artistic creation and aesthetic experience) and play, and offers a hypothesis that concerns the origins of artistic activity using ethological concepts. The relationship between play and art is considered phylogenetically, i.e. art is said to have originated as a kind of play, gradually over millennia acquiring its own independence and individuality. In order for an evolutionary characteristic to be selected for, it must have adaptive value for the species and the author's reason for believing that art has this property is that it enhances both man's sociality and his self-assertion. She concludes with her conviction that art is a fundamental and necessary feature of human life.

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## I. INTRODUCTION

One of the distinguishing features of art is often held to be that, apart from aesthetic value, it is useless. A person who has some acquaintance with evolutionary biology, which maintains that there is no widely-found characteristic in any species that does not possess survival value (usefulness) to that species, might well then ask why human beings so widely exhibit the impulse to make and admire works of art. Obviously then, this kind of behaviour must have some kind of usefulness.

The science of ethology has recently provided a number of interesting insights into the origins, functions and significance of a wide variety of human behaviour and institutions. (Cf. Refs. 1–7 for titles of some recent pertinent books written for laymen.) Although these speculations are highly controversial, even among ethologists, they allow a fresh approach and a wider perspective with which to examine many of the perennially puzzling problems of human life.

As yet, however, there has been little published ethological literature on the origins and value of the artistic impulse. John E. Pfeiffer in his recent, highly regarded volume on the evolutionary emergence of man could find no acceptable hypothesis in the literature for the emergence of man's art [8]. Richard C. Coss recently attempted to apply ethological findings to the making and perception

of works of art, suggesting that certain universally found formal patterns may arouse in viewers unlearned and stereotyped responses whose origins are to be found in avoidance or attractive properties of the forms to which the appropriate response has exhibited survival value [9]. There are numerous studies on the psychology of art, mainly approached via theories of perception, that are only peripheral to a study of art's origin.

In the following pages I offer a hypothesis for the origin of artistic behaviour to explain why it has been biologically retained. I do not wish my approach to be misunderstood as being a reductionist one nor as presuming to explain the genesis or interpretation of an individual work of art.

There are four sections to the paper: (1) assumptions and definitions upon which the hypothesis rests; (2) a discussion of play behaviour; (3) a discussion of artistic behaviour (including both artistic creation and aesthetic appreciation) and (4) a discussion of the ethological relationship between play and art and the presentation of a model for such a relationship.

## II. ASSUMPTIONS

My hypothesis is based on the following assumptions and definitions:

1. The theory of evolution and the continuity and interrelatedness of various forms of life and of life processes is accepted. Further, the study of animal behaviour in many cases provides a vantage point from which to view human activities.

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2. Biological features and functions exist, in general, because they are of survival value to an animal. The appearance of artistic behaviour in almost all human societies means that it is selectively advantageous from a biological viewpoint, and, therefore, possesses adaptive value.
3. Art will be considered as an activity or behaviour involving the intentional making or expressing of something that is more than necessary for practical purposes and not as the product of such activity, which is the usual starting point for discussing the origin of art (e.g. decorated tools, cave paintings and other artifacts of Paleolithic and Neolithic art). Moreover, value judgements, i.e. judgements of whether an example of art is good or bad, will be left aside.
4. Artists exhibit a hypertrophy of an ability that is present in all human beings.

### III. THE BEHAVIOUR OF PLAY

Before analyzing artistic behaviour, I should like to consider the activity called *play*.

In the late 18th century, the poet Schiller saw play as a means of expending excess energy after life needs were met [10]. Herbert Spencer appropriated Schiller's idea of surplus energy, adding, with reference to the recently-formulated theory of evolution, that play is seen especially in higher animals whose time and energy are freed from exclusive concern for immediate requirements [11]. Karl Groos's notion was that play allows a young animal the chance to practice and perfect activities that will be useful in later life [12, 13]. Freud thought of play as providing wish-fulfillment [14, 15]. More recently Johan Huizinga broadened the concept of play to embrace mankind's most distinctively human activities and institutions [16].

Play is not an activity limited to mammals (something like play can even be noted in fishes) but it is characteristic only for them. According to Monika Meyer-Holzapfel, who is my authority for many of the points enumerated below, there is a correlation between the degree of evolutionary advancement and the manifestations of play-behaviour [17]. In more primitive animals, play predominantly involves instinctive movements and patterns of movements, although objects may be utilized. In carnivores, such as cats and dogs and their wild relatives, there is more dissociation from this instinctive basis and in primates, especially anthropoid apes, individual games attain a high degree of diversity and may involve the use of objects. Innovation and experiment enter into the play and even the accidental is made use of. The greatest diversity and complexity of playful activity is, of course, found in humans.

Although one can usually recognize play,

attempts to define the term precisely and succinctly have met with little success, probably because there does not appear to be a single motivational system that accounts for it and no clearly specific end served by it. Spencer and Groos tried to treat play as an activity with a common core and with characteristics that distinguish it from other behaviours. Each actually stressed a different aspect of play. Recent approaches (e.g. in Refs. 18, 19) have treated play more comprehensively, recognizing that components of play are also to be found in other kinds of behaviour. Welker treats play and exploratory behaviour as closely related phenomena and points out their crucial role in adaptive learning and in maintaining alert contact with the environment [20]. Bekoff chooses to define play operationally and, using an ontogenetic approach, considers play along with the development of social interaction and 'metacommunication' [21].

In defining multi-faceted concepts it is often helpful to isolate and discuss characteristic features separately, although it must be remembered that they are mutually dependent and, in some sense, inseparable. Thus, even though a simple definition of play is not to be found, one can list certain general characteristics, many or most of which can be said to be characteristic of a specific play situation.

1. Play is not serious. No matter how seriously an animal plays, it is not directly concerned with finding food, seeking a mate or with any of the ends necessary for day to day survival. As soon as such an end is achieved, one cannot call the behaviour playful. Play thus occurs only as long as no genuine organic need is activated; when hunger, anger or fright make their appearance, the play behaviour is dissolved. In children, at least, play may nevertheless have a psychologically serious function. According to Michael Fordham, 'all play is based on anxiety and is the means whereby a child seeks to master it' [22].

2. Play is non-functional, that is, the behaviour is spontaneous and undirected. In serious situations, instinctive movements belonging to unlike functional spheres (such as nest-building and fighting) are mutually exclusive but this exclusiveness is relaxed in play and they may appear in combination. Similarly, a high sequential probability of what will happen next is characteristic of strongly-motivated serious behaviour but this is not present in play and one result is instability in the forms and duration of playful activities.

3. Play is self-rewarding, that is, the origins of the desire to play are to be sought only in the activity itself, not in an external goal.

4. Play usually involves more than one participant, although all participants do not always have to take part in the action or there may be an imaginary partner, even in the form of an object.

Play thus has a preponderantly social character and enhances what is called contact-furthering. And at the same time, special restraints are maintained. When young animals play-fight, they do not use their claws or teeth to injure a partner. Fordham points out that children's play usually requires appreciation by others and easily goes on to be a vehicle of meaningful communication, as has been recognized and utilized by analysts [22]. In a therapeutic situation, instead of talking, a child will play, expressing its loves and hates, hopes and fears, sometimes in a transparent but mostly in a concealed way.

5. Play consists of a repeated exchange of tensions and releases. The elements of surprise, adventure and whims are fundamental to play.

6. Related to the above, there seems to be a non-specific urge to play resulting from a desire for change, in many cases even for entertainment, especially in higher animals that play whenever an emptiness of activity sets in. Play is not quite the same as curiosity or inquisitiveness, since these may precede either play or a serious behaviour. Yet, there is an element of curiosity or exploratory interest in play. In addition to *specific* exploratory activity, which occurs for example when an animal is hungry and is looking for something to eat, there is another type of exploration termed *diversive*, that is, the 'seeking of stimulation . . . that offers something like an optimum amount of novelty, surprisingness, complexity, change or variety' and cannot be accounted for by 'discomfort due to an inadequacy of information' [23]. Moreover, certain properties in an object itself, such as novelty, surprisingness, incongruity, complexity, variability and puzzlingness somehow control the response an animal will make to it. However, there are measurable limits or parameters to the oddness that will be accepted or tolerated in a given situation.

7. Play is pleasure-oriented. Some ethologists do not consider this a legitimate characteristic of play, since so many attainments of instinctive ends also result in pleasure [19]. However, it must be emphasized that the overcoming of difficulties, especially self-imposed difficulties, results in a feeling of pleasure or delight and the conquest of self-imposed difficulty is often an element in play. The small size of toys in some kinds of play may allow a child to express and enjoy valuable feelings of omnipotence deriving from his complete control over them.

8. Play has a strongly metaphorical aspect, in that something stands for something else, an object is perceived as something different from what it really is in an animal's non-playing life. A ball of paper thrown along the floor releases prey-catching behaviour even when a cat is not hungry and when the object is not a normal prey object. A sibling

becomes a puppy's 'enemy'. A stick of wood is a doll or boat for a child. Imitation and pretense are important ingredients of play; in both activities there is a blurring of truth and credibility, so that the bare facts are fuzzily clothed with what-if and why-not. Similarly, although familiar motor patterns (such as prey-catching, fighting, courting) may be used, they are 'out of context', uncharacteristic for the situation and for themselves. They stand for something other than what they ordinarily stand for and this is recognized and accepted by the other animals or children who may observe them.

#### IV. ART AS A BEHAVIOUR

In the above catalogue of attributes of play, certain affinities with art can be noted. Now, I shall again consider the characteristics of play, one by one, to show how they are applicable to both the making and appreciation of art.

1. Artistic activity, like play, comes about after attention to primary needs of life is fulfilled. This may not hold for certain extreme cases but, on the whole, one must grant that severe privation does not encourage artistic behaviour. Furthermore, although it is considered life-enhancing, art appreciation is not normally considered necessary for survival and is not primarily valued for this.

2. The uselessness of art has been stressed by modern aestheticians such as G. Santayana in *The Sense of Beauty* (1896), H. Bergson in *Laughter* (1900), A. C. Bradley in *Poetry for Poetry's Sake* (1901) and B. Croce in *A Breviary of Aesthetics* (1913) [24]. Objects of practical value such as buildings, furnishings and utensils may be judged from both functional and aesthetic standpoints, which need not be identical. The aesthetic aspects of these objects can be called non-functional, since, after such an object is made, it is not necessary to embellish it, vary its basic shape, etc.

Combining apparently dissimilar ideas and images, finding a congruence in the hitherto-unrelated, is one of the important features of creativity in art and in science [25-27]. This occurs in the making of an individual work of art but may have wider ramification when a significant new conception or style developed by an artist enlarges the possibilities for other artists and appreciation by others. According to Kuhn, a similar situation occurs in science where a currently acceptable paradigm, a conceptual scheme or worldview that inherently prescribes what are allowable relationships among natural phenomena, can be superceded only by the adoption of a new paradigm, although it should be noted that his view has been challenged.

3. The making and appreciation of art are both self-rewarding, with their justification found in the

activity itself. Desmond Morris points out that even chimpanzees who have been encouraged to use paints do so without a reward [28]. (While Morris suggests that man's advanced forms of communication, along with his utilitarian and religious needs, were responsible for the beginnings of prehistoric pictorial representation, he does not, in spite of the title of his book, attempt to suggest a biological mechanism by which the artistic impulse arose in the first instance, nor does he discuss similarities between art and play.)

In regard to the characteristic of the self-rewarding nature of play, it is tempting to conjecture about the origin of tool-making. Tool-making (in chimpanzees, the only reported animals that *make* tools) occurs only in the presence of a visible reward (cf. discussion in K. P. Oakley, *On Man's Use of Fire, with Comments on Tool-Making and Hunting*, in Ref. 29, p. 187), suggesting that human tool-making requires the ability to conceptualize the future, for tools are made for both present and future use. This may well be. However, is it not plausible that tool-making also could have arisen, like art, from possibilities made manifest by the random but self-rewarding playing with objects (which preagricultural humans do, cf. S. L. Washburn and I. Devore, *Social Behavior of Baboons and Early Man*, in Ref. 29, p. 102)? Necessity may often be the mother of invention but this should not obscure the fact that playful experimentation may also stimulate and suggest discoveries. The non-serious, functionally useless activity of play might then in fact be responsible for two of mankind's most important and characteristic activities: the 'practical' fabrication of tools and the 'spiritual' creation of works of art.

4. Like play, artistic behaviour, even though it may be private, takes the artist outside of himself, puts him into relationship with an 'other'. This 'other' is first of all the work of art that gradually separates itself from its maker and takes on a life of its own; secondly, the artist is in some measure concerned with the perceivers who will eventually experience his work. Moreover, a perceiver may be not aware only of the object as an other but also of its maker and, thereby, reach a feeling of identification with them both. The meaning intended by the maker of an art work may be, like the play of children, expressed in a concealed fashion, symbolically. One may, like the child therapist, need special training to understand it.

5. Artistic behaviour, like play, is concerned with tensions and releases, and the elements of surprise and adventure. For example, Leonard B. Meyer has pointed out the affective value in music of temporarily inhibiting and unpredictably manipulating the resolution of expected harmonic, melodic and rhythmic progressions [30]. One can

find in each work of art a blend of the novel and the familiar, the expected and the strange, the conventional and the previously unimaginable.

6. Art making and appreciation work with and respond to novelty, surprisingness, incongruity, complexity, variability and puzzlingness, i.e., like play, with individual variations set in a general context of conventional, communicable limits.

7. Art, like play, is pleasure-oriented, particularly in that the overcoming of self-imposed difficulties or the perceiving of something in a new way results in a pleasurable feeling, which may well include feelings of mastery and omnipotence.

8. One of the strongest characteristics of art is that something is perceived as something else or, as in dreams, something stands for something else. There is a metaphorical quality to art, evident both to the artist and the perceiver. Certain obvious examples come to mind: A bicycle seat topped with handlebars is the head of a bull. A lady dressed in white is a dying swan. The belly of the Shulamite is a heap of wheat encircled with lilies.

Imitation and pretense are important ingredients of art, as they are of play, and depend for their effect on this blurring of edges between one frame of reference and another. Similarly, in aesthetic experience the normal sequence of responses is dissolved (aesthetic distance, willing suspension of disbelief, etc.) in that the perceiver to some degree lets the art work itself, not his everyday common-sense experience, control his reactions. He submits to metaphors and illusions.

The mastery of anxiety, which was noted above as a characteristic of child's play, may appear in adult art as just this attempt to integrate unrelated and even contradictory elements, expressing (or perceiving) them as a whole.

## V. AN ETHOLOGICAL EXPLANATION FOR THE RELATIONSHIP BETWEEN PLAY AND ART

Although one can point out certain characteristics for both artistic behaviour and play that the other does not share, the number of similar important and distinguishing qualities suggests that somehow the two behaviours are related. Indeed the authors mentioned earlier (Schiller, Spencer, Groos and Freud) have all noted resemblances between art and play, most notably the elements of make-believe or imagination and of uselessness, and have gone on to suggest that art is an outgrowth of or a type of play.

'Play theories' of art assume that an adult's art is somehow an extension of his play in childhood, that an artist substitutes artistic fantasy for the make-believe and play he enjoyed as a child. This observation may have some validity but it is much

too limited to serve as the basis for an entire aesthetic. Play theories of art, like early theories of play, are inadequate because they isolate one strand in the total phenomenon and neglect or ignore the rest.

Instead of considering the relationship between play and art *ontogenetically* as has been previously done, I shall here look at it *phylogenetically* (from an evolutionary viewpoint). That is, I suggest that the play impulse in early man's behaviour (which, since it occurs in all higher mammals, seems a reasonable assumption) provided the base from which specifically artistic behaviour could evolve. In this sense, art in its simplest form, the urge to make something for its own sake, could have arisen from play and in the early stages the two would be indistinguishable. Once play artifacts became at the same time objects of value, this specialized type of activity could be enhanced by other instinctive manifestations, needs and motivational systems (such as order, novelty, rhythm, archetypal expressions, social and eventually cultural significance) and become what is today called art, an activity emancipated from play, even though it shares with it certain broad attributes.

Is this plausible? What would be the selective pressures encouraging the differentiation and eventual emancipation of art from play? I should like to propose that the answer lies in art's tendency to enhance social values.

It is accepted that man is a *social* animal, that this quality of sociality has been necessary for his survival and evolution. A cooperative mode of life was necessary for maintaining himself in an environment in which, when alone, he was vulnerable; moreover this sociality led to the development of cultural transmission from generation to generation. Social institutions progressively freed individuals from dependence on instincts, which preclude innovative behaviour, and allowed knowledge to be accumulated and transmitted. Thus non-social or asocial behaviour, being maladaptive, was discouraged by the social group itself or those that practiced it were eliminated by natural causes such as predators, accidents, etc. Conversely, any behaviour that enhanced sociality would, in an evolutionary perspective, possess selective value and be retained.

In order to find an explanation for the transformation of art from play, let us examine the ethological concept of a social signal. Most animals communicate with each other in a variety of ways not always evident to an inexperienced human observer. A tail flick, a change in pigmentation or a sequence of bodily movements, such as neck thrusts, may be a code that conveys information between animals of the same species. It seems that such social signals have usually been derived from a

simpler kind of behaviour that was originally not solely communicatory in function. For example, before beginning certain activities, animals may be seen to exhibit a set of preparatory actions termed *intention movements*, e.g. a bird crouches and raises its wings before beginning to fly. Such simple preparatory movements may be selected for in a group if there exists some advantage in giving information concerning the intention of the sender to other members of the group. Thus, a simple crouch in response to a certain situation may undergo natural selection until the animal develops a ritualized bowing motion that does not precede flight at all but comes to communicate something quite different, e.g. arousal or greeting.

Selection tends to favour neutral sources as the reservoir for social signals, such as concomitants of autonomic activities, e.g. erection of manes or crests, or pigment changes with changes in emotional state, or ambivalent behaviour such as intention movements mentioned above. Gradually over many generations of natural selection such behaviour becomes ritualized and the original movement, sound, odour or posture is enhanced and emphasized, to such a degree that its origin becomes obscured.

Without making a strict analogy or calling artistic behaviour a social signal, I suggest that, in a similar way, art arose from play. Looked at in this way, the original impulse to see something as something else (the neutral source that originated in play) became selected for in the manner of a social signal, not a single fixed structure or pattern as a crest or a tail flag but as a tendency or ability or a kind of general behaviour. This impulse was selected for, because the consequences resulting from it have social significance in that they led to or enhanced certain beneficial social behaviour. In both play and artistic behaviour, it is the *tendency* that is functional or adaptive, not the specific playing or making at the moment, which, as has been noted, is useless. And the tendency for artistic behaviour is functional, because, at the beginning at least, it led to socially beneficial ends. We could assume that proto-human societies whose members did not play and were not able imaginatively to see something as something else, and whose members were content to leave things as they were and not make them special, would lack the degree of social cohesion, the innovative proclivity and ultimately the potential for survival of human groups that did encourage play and art, which provide metaphorical renderings of the world about them.

A few examples of social functions that could have been enhanced by early art-play come to mind. The tendency in play to see something as something else, to vary and experiment for the

sake of novelty and the pleasure derived from novelty could have led in a number of instances to germinal types of artistic activity that furthered social ends, such as the following:

*Attractive:* by decorating or ornamenting the body to draw attention to the person.

*Differentiating:* by elaborating ornamentation of individuals to stress different social roles important to the group, e.g. virgin, married, widowed, mourner, warrior, shaman, adult male and chief.

*Commemorative:* by recalling an event or location important to a group by piling stones or notching or marking a tree and gradually elaborating this monument.

*Didactic:* by developing diagrams or marks used in conveying information (such as locational and directional marks).

*Preparatory and accompanying:* by getting oneself and others in the mood to hunt, to work or to fight by means of special sounds, rhythms and movements, perhaps the origin of singing and dancing.

*Ritual or magical:* by providing objects and accompaniments to these activities.

Such germinal types of artistic activity would become progressively refined and ritualized, as social signals in birds and mammals have been, and in some instances would lose almost all connection with their origin. It is not unlikely that symbolization would arise during this process of abstraction.

One unexpected and paradoxical result of the emancipation of the characteristic to freely see something as something else has been the tendency to establish styles or norms with untransgressable rules. The stability of a style or code provides socially beneficial results of order and predictability that seemingly contradict the playful impulse from which they originally evolved.

Yet, as Morse Peckham has pointed out, there is this '... paradox of human behaviour: the very drive to order which qualifies man to deal successfully with his environment disqualifies him when it is to his interest to correct his orientation. To use an old expression, the drive to order is also a drive to get stuck in the mud' [31]. Peckham believes that art serves to shake up man's healthy caution to stick to well known paths. It is in the nature of any canon of artistic rules that it will eventually be replaced or supplemented by others as conditions and ways of life change. There seems to be an inherent dynamic in mankind's artistic development in which balanced order alternates with experimentation and in which rules arise only to be broken.

I have suggested how in man's evolutionary past art could have fostered both conservative and

innovative social behaviour. In addition, I believe that it has assisted him in developing self-consciousness. By giving artistic form to real or imagined events and objects, man gains perspective on the objective as well as the subjective nature of experience. He does not merely accept or suffer what the world has to offer but actively and individually seeks to transform it.

It is with self-awareness that man acquires his unique place in the animal world. With powers to predict, control, transmit information, determine his own destiny, he becomes capable of controlling his environment. This control and individuality depend wholly on his being social.

It does not seem contradictory to me that both self-assertive and social ends are served by art. Just as an individual recognizes the strength and value of both tendencies in himself, mankind needs its non-conformists and innovators as well as its more conservative and socially cohesive members.

If it is indeed true, as I have argued here, that art has contributed both to man's sociality and self-assertion, its intrinsic significance should be evident. I believe that artistic expression and appreciation are not luxuries or trifles but essential human characteristics whose value is to be found in the long-term evolutionary view as well as in the individual's personal life.

The author acknowledges with gratitude the important contribution to the gestation of this paper and certain of its final details made by John F. Eisenberg, Resident Scientist, National Zoological Park, Washington, D.C.

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