

## PORTRAIT OF THE ARTIST AS A YOUNG CHIMP

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Art, like morality, consists of drawing the line somewhere. But when is a line or a group of lines elevated to the realm of art? When is a person who draws these lines called an artist? Does only man have art, or, is art possible among other animals? Is there a basic aesthetic sense which permeates all life?

This paper will discuss these questions while exploring the concept of the biology of art.

## INTRODUCTION

Man is the terminal product of some 65 million years of primate evolution. And "if we are to understand man, if we are to be anthropologists in a real sense of the term, our knowledge of every aspect of the human organism and its functioning should extend downward to its lower primate origin" (Hooton in Gaven 1955:9). Not only should we attempt to trace the morphological evolution of man, but we should also attempt to reconstruct his behavioral evolution as well.

The reductionist school of anthropological thought holds that since man is an animal, everything about him, including cultural phenomena, must have a simple biological explanation. Extreme reductionism leads directly to the naturalistic fallacy (Bidney 1953), in which modes of thought and action, taken individually and collectively, are attributed to innate human nature when, in fact, they are cultural products and achievements. Conversely, many of the numerous opponents of reductionism fall victim to the culturistic fallacy whereby all human actions are viewed as totally determined by culture and the element of nature is either too greatly minimized or completely ignored.

Similarly, many art theorists are also divided into two opposing camps. Some view aesthetic art as being totally reflective of the culture and times; others feel

that art is merely the visible manifestation of the artists' innermost (sub-conscious, unconscious or pre-conscious) emotions and/or feelings.

Somewhere on the continuum between these polar extremes lies the most probable explanation for the relationship between art and both biology and culture.

#### WHY STUDY APES?

A better understanding of the evolutionary nature of man will be achieved when we know: (1) the world of the animal, gaining insight from it with which to view our own world; and (2) the evolutionary course by which man arose (Arbrey in Marais 1969:38). Both of these areas are currently under active investigation.

Since it is almost impossible to completely divorce most aspects of man's complex behavior from its intimate dependence on human culture and since sub-human primates have not developed complex cultures, it is often possible to clarify and/or formulate the basic elements of many human problems by studying animals.

As human beings, we know too much about man - too much to be able to pull out from this tangle the fundamental and elementary threads that form the basis of a systematic theory. The essentials escape us because our personal information tends to fuse itself with scientific information. We have less involvement with animals and, therefore, should be able to look at them more dispassionately (Zajonc 1969).

However, "the more an animal resembles our own general organization, the more we expect it to share the type of experience we are familiar with ourselves" (Portman 1961: 145). Each animal has its own umwelt - the universe as known to each species as a result of its sensory perceptions and the meaning it attributes to objects (Graven 1967:13). And the characteristics of this umwelt are dictated, to a large degree, by the animal's sensory mechanisms (Klopfer 1967:126). Since the sensory mechanisms of the higher primates have been shown by numerous investigators to be extremely similar to man's, it is not an unreasonable assumption that their umwelt should also be similar and observed similarities in behavior might be the result of similar motivations. But, we must always remember that "similar" does not mean "identical".

In discussing the biology of art, a basic assumption of primatology must be recalled: those factors that are common to both contemporary great apes and man are probably derived from the basic anthropoid complex. Of course the behavior of non-human primates has not been static during the 12 to 14 million years since morphological diversity from the hominids, but their contemporary behaviors probably do offer insights into the possible origins of numerous human actions. "The specific evolution of lower forms does not stop when they are by-passed by higher forms. The stages or levels of general evolutionary development are successive, but the particular representatives of successive stages need not be"

(Sahlins and Service 1960:32).

#### WHAT ABOUT MENTAL EVOLUTION?

Darwin, in The Descent of Man, concluded that phylogenetic differences in intelligence were of degree, not kind, and any seemingly unique property which made its appearance in the animal series really was not unique at all. Some hint or promise of it always could be discovered at an earlier point in the series.

Using unpublished material from Darwin, Romanes, in the late 1880's, argued even more strongly for the essential similarity of reasoning processes in man and the higher animals. He saw the evolutionary course as a progressive development of discrimination ability and an enhancement of the power of adapted response. Consciousness developed gradually in phylogeny and its presence is indicated in various species by continuously increasing response latency. However, the presence of consciousness is known ejectively; i.e., our knowledge of another's mental state is inferred. And this inference is possible only because of the similarity in response patterns between ourselves and others when confronted with the same stimuli.

"Ethology...provides strong evidence that something like conscious mind must have evolved a number of times in the course of the evolutionary history of the animal kingdom" (Thorpe; quoted in Dobzhansky 1967:65). And "mind" can be equated with awareness and defined as "a body in action, a peculiar pattern of action of a special kind of bodily appa-

ratus" (Dobzhansky 1967:66-67). In this sense, each species has its own characteristic mind - its own umwelt. But man possesses a type of awareness that's unique in the animal world: self-awareness which is "the most fundamental characteristic of the human species (and) developed along with the capacity for abstract thought, symbol formation and the use of language" (ibid).

Recent laboratory and naturalistic studies of the primates are revealing behavior repertoires that were formerly considered unique to man. It appears that the crucial questions to investigate might concern the difference between their capabilities and their actual achievements. It appears that sub-human primates are capable of human-like behavior - up to a point - when nurtured by human surrogate parents. But, so far as is known, they draw the line on human acculturation when they reach adolescence. If this end point is determined by biological limitations, then can we not justifiably assume that a chimp subjected from an early age to human enculturation is representative of some early stages in our own ancestors' cultural development?

#### THE SOUL OF THE APE

Any discussion of mental evolution should include the relationship between innate/instinctive and learned/acquired behavior.

Eugene Marais, writing in the early 1900's but only recently published, has posited the simultaneous existence of two kinds of memory: phyletic and causal. The phyletic

memory forms the unconscious portion of the psyche, is inherited and may be viewed as producing innate behaviors. The causal memory is the conscious portion of the psyche, is learned, and springs from experiences within one's lifetime. It depends on the ability to accumulate experiences and memorize the relation of cause and effect. Psychic evolution is then viewed as the gradual ascendancy of causal memory over phyletic memory; yet one never succeeds in displacing the other. Hence, the character or nature of the "mind" of any animal would depend upon the relative predominance of these two different memories. In the primates, the causal memory is clearly dominant.

The degree of development of any animal's mind can be inferred by the following criteria (Yerkes in Washburn 1926:32): (1) structural; (i) the general form of the organism; i.e., its organization; (ii) the nervous system; i.e., its neural organization; and (iii) its neural specialization; and (2) functional: (i) general form of reaction; i.e., discrimination; (ii) modifiability of reaction; i.e., docility; and (iii) variability of reaction; i.e., initiative. On all counts, by all these criteria, the higher primates are amazingly similar to man.

Therefore, if a chimp displays behaviors observed in humans, the human behavior should be interpreted by first applying Lloyd Morgan's canon (1890): in no case may we interpret an action as the outcome of the exercise of a higher psychical faculty if it can be interpreted as the outcome of the exercise of one which stands lower in the

psychological scale.

Is man, then, merely a primate with the most dominant causal memory? Or, is man something more?

According to Morgan's doctrine of emergent evolution (1891), as evolution progresses, new traits and properties emerge which are radically different from anything that had gone before. An emergent is something really new which appears and which can't be predicted from a knowledge of the system in which it arises. The most graphic example of an emergent is the beginning of life in evolution. The problem then becomes one of distinguishing emergents (which are different in kind or nature) from things which are different only in degree.

Mind has, throughout the process of evolution, been molded to the external world. "...Mind is a constant luminosity; consciousness is intermittent, a series of flashes of different intensities" (Dewey 1934:272). The sense impression of external origin gives rise to an impression of similarity or dissimilarity, which is part of the internal reaction to the external stimulus. Thus, impressions are raised to the level of sensations. A sensation is an impression that has been discriminated from others and recognized as being of a certain nature. Our perceptions, then, do conform to outside experiences. But they conform not in exact resemblance, but in mental symbolism which depends on the umwelt and mind of the perceiving organism.

Sensation implies the first stage of mental activity. But it is very difficult to distinguish between perception



and actual conception. An example will illustrate this point. A child and an adult observe a helium filled balloon rise in the air and eventually burst. The child perceives the event; but the adult conceives that the balloon rises because helium is lighter than air and it bursts when the pressure inside the balloon is greater than the surrounding air pressure. The child and the adult see the same event and react similarly, but they actually "see" it differently.

Transferring this example to the chimps, when a being whose structure resembles our own receives the same stimulus and behaves in a similar manner as a result of the stimulus, we assume that it has an inner experience which resembles our own. But, does it conceive the event in the same way? or, does it merely perceive and react to it? Could it possibly have the same cognitive maps?

All psychic interpretation of animal behavior must be on the analogy of human experience, but we should always remember that different animals have different umwelts. Realizing that humans cannot study chimps emically, we must also realize the dangers in unbridled anthropomorphizing.

#### AESTHETIC ART

We can now attack the question: is aesthetic art an uniquely human activity - an emergent? Or, is it an activity which is common to the primates, or, possibly, even to the animals in general?

"The values within the domain of art are firmly anchored in the biological...We observe art because of its basic

and common roots permeating life...Everyone is equipped by nature to receive and to assimilate sensory experiences. Everyone is sensitive to colors, everyone has a sure 'touch' and space reactions, etc. This means that everyone by nature is able to participate in all the pleasures of sensory experience, that any healthy man can become a painter. That is, he can give form to his reactions in any material..."(Maholy-Nagy 1947:13-17). Art is the most intimate language of the senses, a direct linking of person to person.

"What art contains is not basically different from the content of other utterances, but art attains its effect mainly by subconscious organization of its own means... (The content of art) can be generally grasped directly through the senses, on a subliminal level, without a conscious thinking process" (ibid:76). To state it differently, according to Maholy-Nagy, art may be grasped primarily by our phyletic memory.

In the same vein, Ehrenzweig (1967:77-78) states: "It is the glory of great art that it can tolerate the arbitrary manipulation (interpretation) of its conscious surface, because its real substance belongs to deeper untouched levels... The complex diffuse substructure of all art has its source in the unconscious and our own unconscious still reacts readily to it, preparing the way for ever new (conscious) reinterpretations...The undifferentiated inner fabric of art can never be fully appreciated. We transform it into

something more solid and definite by the very act of perceiving it...The hidden structure of art is created on lower levels of awareness that are nearer to the undifferentiated techniques of the primary process. But once it is created, it can only be observed on a higher level of awareness."

Art's conscious superstructure may be largely composed by intellectual effort, but its vast substructure is shaped by unconscious spontaneity. Therefore, if we want to discover the basic substructure of art - the primary aesthetic qualities - it is necessary to study art produced with a minimum of human conscious control. Primate artists are one conceivable way of doing this.

"The preconscious mode is a basic oneness and unity - a mode of experiencing and feeling - a common experience that finds expression in all the various phases of man's activities...in the creative products of the artists...and it stems essentially from the basic organic unity that is the phyletic inheritance of man...The sense of inner completeness and the feeling of continuity with all things is the essence of this mode" (Burrow 1964:71). Burrow attributes the development of this universal unity in humans to the mother-child relationship fostered during early infancy. And the importance of this relationship to the normal growth and development of all higher primates have been conclusively demonstrated by numerous workers, most notably Harlow and his associates.

"Pre-language man shared a commonness in the impressions felt. He was at one with the world and experienced a harmonious functioning of the total man...With the increase of symbol usage, a radical biological change took place in our species. Our feeling-medium of contact with the environment and with one another was transferred to a segment of the organism - the symbolic segment...what had been the organism's whole feeling was transformed into the symbol of feeling" (ibid:111).

Nevertheless, there is a distinction between expressions of feelings which are art and expressions of feelings which are not art; e. g., yawning, laughing, stretching, etc. This distinction is the critical control which is consciously applied to produce a result which satisfies some specified condition. Art, then, can be defined as "the conscious objectification of one's feelings" (Ducasse in Tomas 1964:76). Objectification of feelings implies that the artistic expression is creative of something which is capable of being contemplated by the artist and that in contemplation, that thing yields back to the artist the feeling, meaning or volition of which it was the attempted expression.

The creative act or process is still a mystery to both artists and psychologists. "We know, of course, something about observable aspects of the creative act - but what we know is superficial and trivial compared with what we do not know. It is not an exaggeration to say that in respect to its hidden factors, we know nothing about the creative process, except that it does occur, and chiefly, of course, because

the active imagination performs the synthesis of the old (form) and brings about the creation of its new product (style) unobserved, in the depths of the unconscious, if you will, after conscious effort gives it its first push" (Vivas in Tomas 1964:91). "The freedom to create is somehow linked with facility of access to those obscure regions below the conscious mind" (Eiseley 1962:50).

To be judged as creative art, the work must have coherence and lucidity to the degree that it is a unified whole and the relations between its parts are felt by aesthetic intuition as necessary, not fortuitous, connections. A lack of coherence is interpreted as a lack of control by the artist over the activity to which the work owes its origin. This often facilitates distinguishing between works of creative art and products of passive imagination (Tomas in Tomas 1964:101).

Coherence produced by conscious control may not be evident to all persons who experience some examples of abstract art. However, no matter how abstract art is, it is never entirely meaningless. As conceptualized by Mumford (1952), when art seems to be empty of meaning, such as some highly abstract works, what the painting is saying, indeed what the artist is shrieking at the top of his voice, is that life has become empty of all rational content or coherence. And that, in times like these, is far from a meaningless statement. But it is a culturally induced statement and about as far removed from a simple, basic aesthetic sense as is possible. It is art in the highest stage of development. Art which is the highest

level of expression of a period. Art that refines the sensibilities and also invents and perfects symbols of discourse. Art which exhibits both self integration and inter-communication. Is a chimp capable of producing this type of art? It seems highly unlikely.

Nonetheless, some primate paintings might be considered beautiful. Our aesthetic sense of beauty involves a number of complex perceptual, conceptual and emotional elements. It "appears to involve a pleasurable stimulation of the sense organs concerned, together with perceptions of symmetry, or diversity and contrast, and of proportion, with a basis of unity" (Morgan 1890:410). But beauty is a difficult quality to define. Why are some combinations of form or color valued as beautiful?

"(Beauty) is associated with a pattern, a Gestalt, an orderly arrangement of impressions...Beauty is orderly, not chaotic. It is an organized pattern of sights or sounds or words or images which strikes a chord within us; which vibrates, so to speak, on our particular wave lengths. These vibrations may be in different keys, depending on our aesthetic background and thus may seem at first to be out of harmony with each other; but each, in its own way, arouses a sense of the beautiful. This suggests that there may be a relation between an organized pattern that we call beautiful and the organized protoplasmic pattern that each of us is...Beauty is something associated with life. The goals set up in protoplasm lead to its creation...Beauty is something that must be experienced, not measured" (Sinnott 1957:156-164).

If beauty is indeed associated with organized patterns which permeate the natural world as well as the cultural world, then it is very possible that all higher animals, especially the sub-human primates, have an aesthetic sense. To quote Graven (1967:155): "There are... aesthetic tastes common to a great number of species, and it may not be by chance or just by habit that we react to the song of a bird or the perfect formation of a nest, for our tastes and our colors have biological roots which it would be useless to deny."

Does this mean, then, that "the artist is merely a channel whose only function is to transmit the forces of nature into the forms of art"? (Paul Klee, quoted in Read: 1965:14). It seems unlikely. In the words of another artist, Maholy-Nagy: "The young painter passes beyond mere subconscious doodling when he begins to discover problems for himself and then tries to solve them...(But) the complexity of an expression is usually beyond conscious grasp. The conscious part is a small component, which helps to synthesize the elements, apart from the act of intuitive coordination...The intuitive is most accurately understood as a speeded-up, subconscious logic, parallel to conscious thought in all save its greater delicacy and fluidity. Usually the deeper meanings so often ascribed to the intuitive more properly belong to sensory apprehension. Here resides the ineffable. This kind of experience is fundamentally non-verbal but it is not inarticulate to the visual and other

sense. Intuitive in the plastic sense, in all the arts, is a matter never, probably, capable of conscious verbalization" (P.68).

"The purpose of non-discursive forms in art is to articulate knowledge that cannot be rendered discursively because it concerns experiences that are not formally amenable to the discursive projection. Such experiences are the rhythms of life, organic, emotional and mental (the rhythm of attention is an interesting link among them all), which are not simply periodic, but endlessly complex, and sensitive to every sort of influence. All together they compose the dynamic pattern of feeling. It is this pattern that only non-discursive symbolic forms can present, and that is the point and purpose of artistic creation" (Langer:1953:240-241).

Hence, as important as the forces of nature are to art, they must be "felt" and subconsciously interpreted by artists - artists capable of consciously rendering universally encountered experiences which are often ineffable.

#### THE ENIGMA OF ANIMAL PAINTERS

Are the sub-human primate painters, some of whom have had their paintings sold, artists in any of the previously defined senses of the term? If not, what are they?

"Ape picture makers provide a new source of really SIMPLE aesthetic material for analysis of human art" (Morris: 1962:14). They exhibit composition control, but a minimum of it; limited calligraphic development; and some aesthetic variation. Therein, says Morris, lies the basic fundamentals



of aesthetic creativity.

In the past 50 years, 32 infra-human primates have produced drawings and paintings (23 chimps, two gorillas, three orangutans and four capuchins). During their "creative" periods, the following tendencies were observed: (1) filling in a blank page, but not scribbling outside it; (2) marking a central figure; (3) balancing an offset figure; and (4) becoming calligraphically bolder with time (simple lines to multiple scribbles). Furthermore, since these pongids were not rewarded for their efforts, their art-works are classified as self-rewarding activity; i.e., an activity performed for its own sake, not to attain some basic biological goal. Morris 1962:144 feels that self-rewarding activities occur only in animals which have all their survival problems under control and have surplus nervous energy which requires an outlet. "When external needs are taken care of, attention is paid to internal sensations which are manifested in movements, especially those not related to locomotion" (Washburn 1926:312 ).

One outlet for this excess energy is play. But, in humans, play is engaged in with the purpose of enjoying oneself; whereas, drawing is done to produce something - to create - and the enjoyment of the act is incidental to the primary end of creation.

And that creation is the purpose of some of the chimps' art is well illustrated by Bella, a five year old female observed by Kortlandt, who exhibited such intensive concen-

tration while scribbling that she became very upset if the paper were removed before she considered the drawing finished. If "the concentration of the attention is directly proportional to the intensity of the emotion evoked" (Morgan 1890:384), then Bella was apparently consciously aware of what she was producing. And her attention probably involved a state of suspended reaction involving careful discrimination of stimuli. This suggests a connection with the refining and modifying influence of individual experience and she was, then, "creating" in the artistic sense of the term.

"To create something means to make it nontechnically, but yet consciously and voluntarily...The created thing is made deliberately and responsibly, by people who know what they are doing, even though they do not know in advance what is going to come of it" (Collingswood in Tomas 1964:7-8, cf. Langer 1953: chapter 20). Apparently the only part of these statements that is inapplicable to Bella is the word "people."

The first "artistic" ape in the record was Joni, an infant chimp which Nadie Khots presented with drawing materials in 1913 as part of a multi-dimensional reaction sequence (Morris 1966:43). Khots observed that Joni's scribbles exhibited visual control and gradually developed into patterns of increasing complexity which culminated in criss-crossing lines.

In the late 1920's, the Kelloggs raised the chimp, Gua, along with their infant son, Donald. Donald scribbled spontaneously at 14½ months of age while Gua scribbled only after demonstration at 12 months of age.

Betsy, a female chimp at the Baltimore Zoo, excelled at finger paintings which were sold at \$75.00 apiece, thus enabling her to raise her own dowry and acquire a mate. Two child psychologists, who understandably prefer professional anonymity, analyzed her paintings without knowing they were infra-human and concluded that they were produced by (1) a fiercely belligerent 10 year old girl of schizoid type, and (2) a 10 year old girl, paranoid type, showing strong father identification. Both psychologists were correct about her gender, but it makes one wonder about Betsy's mental health.

Congo, Morris' chimp, produced his first drawing at age one and one-half years. He was given no instruction other than how to hold a pencil. Over a three year period he produced a grand total of 384 drawings and paintings. His drawing sessions usually lasted about 30 minutes after which time he got bored; additionally, he didn't seem to desire more than a few sessions each week. Maybe he had to be inspired!

Although many of Congo's pictures appear to be random scribbles, some later ones show distinct patternings and evidence of calligraphic development. Small jerky lines were replaced with broad sweeping curves that suggest a fan pattern - his distinguishing trademark. His ultimate achievement was the construction of a circle which was then marked inside. This was as close as he ever came to producing a representational picture.

To ascertain whether the scribbles were only random muscular actions or really disciplined marks, Morris prepared

sets of test papers bearing various geometric shapes and lines and offered them to Congo who promptly reorganized his scribbling pattern: if the test figure were a central square, he concentrated his marks on it; if the square were placed to one side of the paper, he concentrated his markings on the other side of the paper, thus exhibiting very definite balancing tendencies. Congo was tested 172 times and Morris "obtained results that showed conclusively that the animal possessed a basic sense of graphic composition, crude admittedly, but nevertheless distinct."

It is highly probable that Congo and other higher primates are capable of composition because "composition is directed by an unconscious sense of order in regard to the relations of color, shape, position, etc., and often by a geometrical correspondence of elements" (Maholy-Nagy 1947: 71). The manner in which lines are related carry a rich message because lines are often interpreted as being diagrams of inner forces. When these lines are arranged to produce a balanced effect, symmetry is achieved. As for the origin of this symmetry, Weyl (1952:8) states: "the mathematical laws governing nature are the origin of symmetry in nature: the intuitive realization of the idea in the creative artist's mind is its origin in art."

#### BIOLOGICAL PRINCIPLES OF ART

Morris (1962) delineated six biological principles of art from his comparative study of higher primate drawings and scribbles:

(1) Self-rewarding Activation. The animal finds his reward in the pleasure of drawing itself, in the creative process. He becomes upset when disturbed and there were cases of very mild animals biting their trainers who tried to interfere. Additionally, when a reward was offered for each drawing produced, the chimp soon lost interest in the creative process and hurriedly scribbled random lines anywhere on the paper to obtain his reward. The creation of an art-work was no longer the principal motivation.

(2) Compositional Control. The primates tested seemed to have a "feeling" for balanced masses and for rhythm in the image. There was a definite tendency to complete one central figure.

(3) Calligraphic Differentiation. Graphic development of the splotches or lines is made in spurts, but the primate discovers forms in a slow and continuous process. In this respect, apes are quite similar to young human children.

(4) Thematic Variation. Apes seem to enjoy exploring the field of such variations and they study the effect created by the slightest changes.

(5) Optimum Heterogeneity. An art work begins with extreme homogeneity (blank sheets of paper) and goes towards greater and greater heterogeneity. Maximum heterogeneity (proliferation of detail) is not necessarily what's desired and the artist should, in theory, be able to feel when his work is completed. This is well documented for pongid artists.

This optimum heterogeneity is not shown with colors. The apes used everything at their disposal, indiscriminately

and without thrift. But, we should remember that the experimenters usually hand the paint-dripping brushes to the apes who must, therefore, use whatever is given to them in order to finish the pattern they've started.

(6) Universal Imagery. This was convincingly illustrated by Rensch (in Morris and Graven) who demonstrated the overwhelming preference of several species for symmetrical over non-symmetrical objects. According to Morris, its presence in ape pictures can be attributed to three factors: a) muscular - certain movements are more pleasing, more motorifically gratifying; b) optical - some arrangements form more pleasing patterns; and c) psychological - a similar umwelt should produce similar sensations within a species.

#### CHILDREN'S ART

"Perhaps the affinities between children and animals are different from those which can occur between animals and adults" (Graven 1967:121). "The infant chimp, when properly handled in the home situation, reacts in many ways as a young child does. It...shows strong attachment for its caretaker or experimental mother, passes a good many of the preschool developmental tests designed for children, and imitates acts performed by adults without special training. Up to the age of perhaps three years, its 'mental age' is not far behind that of a child" (W. Kellogg 1968:423).

As seems likely in apes, "painting for the young child expresses his own personal reaction and feelings and he....

draws (scribbles) not what he sees, but what he knows and understands" (Hoover 1961:26). Although many structures and functional capacities are present in the cognition of the young child, his ability to express these capacities is limited because his memory and attention span are not fully developed. As the child accumulates experience, he develops cognitive heuristics which help him to overcome these basic behavioral limits. Hence, cognitive competencies reflect the influence of maturational and experiential determinants under the control of an internal self-regulating mechanism (Beyer et al 1968:923).

Therefore, as the child matures, his behavior diverges further from the apes because the self-regulating mechanisms, or hereditary endowments, of the two genera are different. But comparison of young, pre-language children with young apes reveals striking behavioral similarities. And both young children and young apes like to scribble.

"Art need not be representational to be rewarding. We should look at scribbles for their shapes, colors and balance" (R. Kellogg 1967:93). And in regard to shapes and balance, apes and children show the same developmental trends.

"...The artistic impulse is universal...All children everywhere draw the same things in the same way at the same age...(and) all pass through the same stages of development" (R. Kellogg: pp.11-13). This might be explained by what Ehrenzweig (1967) calls syncretistic vision: the recognition of objects from cues rather than from the analysis of abstract detail. (Piaget, in numerous writings, has stressed the

"concreteness" of young children over abstraction abilities and neurophysiology has established the dominance of pattern recognition in the visual systems of most of the higher primates.

"The two year old doesn't start out with a plan in mind, but when he looks at a scribble after it is finished, he sees a visual whole, an entity" (R. Kellogg:p. 29). Apparently the apes do, too, or they wouldn't exhibit non-typical and/or violent behavior when their artwork is removed before they "consider" it finished.

"Each child is striving always for balance, design and variety within a set of self-taught aesthetic formulas. As long as children feel free to draw naturally, balance remains a prominent feature of their work" (ibid p.67). Until children reach about five years of age, their drawings are so much alike; i.e., the universal imagery is so prominent, that a trained observer finds it difficult to distinguish between the drawings of girls and boys. And, as we have seen, two trained observers didn't even distinguish between human and non-human!

By the time the representational stage is reached, the child already is talking and well on his way to becoming humanly acculturated. As explained earlier, this changes his world-view. Language enables him to integrate his various awarenesses symbolically; hence, his art will no longer reflect a basic, simple aesthetic sense - it will become more influenced by his culture. At first, this cultural influence is general, universal and associated



with a human way of life. At later stages, the influences of each particular human culture will be felt and expressed. "Every culture has its own collective individuality. Like the individuality of the person from whom a work of art issues, this collective individuality leaves its indelible imprint upon the art that is produced" (Dewey 1934:330). Nevertheless, the children "are building upon the creative impulse which is the heritage of all mankind and is limited to no one land or culture" (R. Kellogg:p.77).

But does this creative impulse which is "the heritage of mankind" spring from man's early ancestors; i.e., does it come, ultimately, from the basic anthropoid complex? Morris believes it does. By isolating his biological principles of art, he believes that any rules that are basic enough to apply to several related species, rather than to one species or to one epoch of one species, must indeed be fundamental to the activity concerned.

#### STAGES OF ART

Mumford (1952:25) delineates three stages in the development of art: (1) the self-enclosed or infantile stage, the stage of self identification; (2) the social or adolescent stage, when exhibitionism passes into communication, with an effort not merely to attract attention but to create something worthy of approval; and (3) a personal or mature stage when art, transcending the immediate needs of the person or the community, becomes capable of begetting fresh forms of life: when the work of art becomes itself an inde-

pendent force. At this final stage, the highest degree of individuation produces the widest range of universality.

It seems likely that apes who draw have remained in stage one. Washoe and other "linguistic" apes should be able to advance to the second stage since evidence indicates that children enter this stage when they consciously attempt to produce representational drawings; i.e., after they're talking.

The third stage, however, is currently limited to man and corresponds to the highest achievements possible only by the most gifted artists. Striking examples of stage three art include the Greek kouroi and Picasso's Guernica. These represent emergents in art's evolution whereas the preceding stages are more properly interpreted as differences in degree of development.

If it is acceptable to designate as art works produced in all three stages, then the higher primates indeed are artists because the lines they draw apparently do represent their inner feelings and attempts at self-identification.

Although biological, psychological and cultural influences are present in all drawings produced, the relative importance attached to any single factor will largely determine how we, as individuals, classify a drawing.

If a reader prefers to view as art only works belonging to stage three, then the sub-human primates must be categorized not as artists but only as apes who draw.

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