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FIGURATIVE ART VERSUS ABSTRACT ART: LEVELS OF CONNECTIVITY

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Abstract

Western culture in the twentieth century supports two kinds of visual arts: figurative art and non-representational art, each of which is the negation and opposite of the other; and yet both are called 'art'. The main reason for this confusing state of affairs is the absence of clear demarcation lines between art and non-art. In this essay an attempt is made to outline a different approach for revealing the profound differences between these two kinds of artistic phenomena by anchoring art in the nature of mind. It is suggested that all branches of culture, including art, are specific embodiments of certain basic properties of mind, the most important of which is the complementarity of connectivity-disconnectivity, but they do so at different levels of abstraction. It can be shown that all works of figurative art share those attributes of mind, but none of the works of nonfigurative art share them.

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In each and every case that which unifies is mind.
Aristotle, De Anima 430b.

One of the peculiar characteristics of western culture in the twentieth century is the fact that it supports two kinds of visual art: figurative art and nonfigurative or non-representational art, each of which is the negation and opposite of the other; and yet both are called 'art'. In fact, there are so many basic differences between figurative art and abstract art that there is certainly room for the question whether these two cultural phenomena have any common denominator at all that is sufficiently significant to justify placing both in the same meta-category of 'art'. The concept of Art has suffered from an accumulative ambiguity over more than two thousand years, today reaching a stage at which every thing, including nothing, may belong to that category, and it is therefore very doubtful whether any clarification can reduce this ambiguity to any significant extent. However, the terms 'Figurative Art' and 'Non-figurative Art', although far from unambiguous, can be characterized at least sufficiently to reduce crude misunderstandings, and I shall therefore try to clarify briefly the sense in which I shall be using these terms.

By the concept "figurative art" I mean any picture or photograph that contains any recognizable images of objects. One of the salient properties of figurative representations is that they are in principle readable to one extent or other, independently of place or time: regardless of whether they were made in the prehistoric era, tens of thousands of years ago, or in our own time. The boundary of figurative art is, then, the limit of readability, and therefore even the cubist portraits of Picasso should be placed in this category. On the other hand, non-representational art cannot be characterized so easily, because it includes numerous and mostly overlapping categories containing some two hundred names which have both common and unique characteristics. This essay will contradistinguish figurative art only from "Abstract art", which is the central trend of nonfigurative art. Although this school of art includes a few variations, the differences between them are not significant for our discussion. Unlike figurative paintings, abstract paintings are not meant to represent any objects, and therefore contain no recognizable images of objects. Normally these paintings are arbitrary or idiosyncratic compositions of few or many colors and forms, and there is therefore no meaning at all in speaking of readability in its strict sense since each person is likely to see in them whatever comes to his mind. Some readers, especially followers of Nelson Goodman (1968), might argue that although abstract art does not represent, it symbolizes through metaphorical exemplification, or expression. However, even one who maintains this argument has to admit that the word "symbolization" is used in the context of abstract art in a rather metaphorical sense because, unlike figurative art, abstract art has no symbol system at all. Furthermore, it is questionable whether exemplification is indeed a case of symbolization¹. Some abstract paintings contain geometrical configurations, as in paintings of Malevich, Rothko, Mondrian and the like in which one can easily identify the geometrical forms. However, these paintings do not represent or symbolize geometrical shapes by pictorial symbols; rather, they display specific cases of rectangles or other geometrical shapes, and therefore we cannot honestly claim to understand them beyond this elementary level, as geometrical forms.

Beside representation and readability there are many more fundamental differences between these two kinds of art which strengthen the doubt as to whether abstract art is indeed art, or perhaps something else.

The great difficulty is of course the fact that to this day no criteria have been found that enable us to differentiate clearly between art and non-art. This problem did not particularly bother anyone as long as there existed only figurative art, which had functioned well for some forty thousand years. The problem became central in our own century, and it is likely to become more acute in the future, precisely because figurative art reached exhaustion in our century, and many artists rightly felt the need to create an alternative art of a new kind. They looked for an art that would represent the noumenal and universal world as Mondrian proposed, instead of depicting the phenomenal world by means of the representation of the specific objects that are in it. (Elgar,1968.) However, what has actually happened is, that on the one hand nobody has so far succeeded in showing how it is possible to realize this noble aim; while on the other hand countless products have accumulated, of the many attempts at achieving that goal, all claiming to be realizations of the new art. At the same time, a rich and confusing pluralism has been created in art, to such a degree that no-one knows any longer what should be regarded as art and what should not. In this and other essays, I shall try to propose a different strategy for delineating demarcation lines of art, the essence of which is an attempt at the identification of the most basic attributes of Mind expressed in figurative art for tens of thousands of years, but not present in any one of the many alternative styles created in this century. On the other hand, this strategy poses another problem, immeasurably more difficult than the problem of the characterization of the boundaries of art: what is Mind?

There are very good arguments that can explain the fact that to this day we have not, and apparently never will have, an exhaustive understanding with regard to the nature of mind. The simplest and most self evident reason is the fact that all of our knowledge about any subject is a certain interpretation of the matter in the light of preconceptions, motivations and expectations which guide our understanding, and which are themselves in a process of continuous change. Indeed, as may be seen from the history of philosophy and psychology, the interpretations given to mind are many and diverse, according to the world view underlying these interpretations. This fact is an expression of the open-endedness of our intelligence, and it may therefore be expected that thinkers will in the future continue to propose new interpretations of mind, and all that we can hope is that they will perhaps be more coherent and at a higher level of abstraction than those we already have. Even without commitment to any specific interpretation of mind, it may be said that all branches of culture, beginning some two and a half million years ago with tool making, throughout the evolution of language, totemism, prehistoric art, mythology and philosophy, and up to modern science, mathematics and logic, are different embodiments or constructions of mind. This broad-sweeping generalization will take on more significance if we say that in every branch of culture certain fundamental attributes of the mind are expressed, and that this is also true of art. At the same time it must be emphasized that in the different branches of culture these attributes are revealed at different levels of abstraction and generalization. The fundamental attributes of mind cannot be revealed directly, but only in a roundabout manner by means of an examination of the metastructures common to the different products of the mind, and I therefore wish to call these fundamental attributes Mindprints. In my opinion these attributes characterize the

mind, whether we adopt the limited sense of the term as intelligence, or its metaphysical sense as reflected in Greek terms such as Nous or Logos, or in the Hegelian all-embracing totality of this term. In order to furnish the reader with some peg of support we shall say at this stage that in a general sense, mindprints are the metastructures of the complementarity of mind and reality². The following is a tentative list of mindprints³: Connectivity - Disconnectivity (Codis). Open endedness - Closed endedness. Recursiveness - 'One-off'. Transformation - Invariance. Hierarchy - Randomness (Chaos). Symmetry - Asymmetry. Negation -Affirmation (Double Negation). Complementarity - Mutual Exclusiveness. Comparison - (No Comparison ?). . Determinism - Indeterminism and Choice. The salient attribute of the mindprints is that each one of them is both an epistemological and an ontological oxymoron. As such, each one includes as its sub-aspects, attributes possessing the character of complementary opposites, like Yin-Yang in Taoism. The great importance of mindprints lies in the fact that on the one hand, they may perhaps clarify the most fundamental cognitive attributes common to all branches of culture; while on the other hand, the idea of mindprints may also clarify the uniqueness of each of the branches of culture in accordance with the level of actualization of these meta-structures in each of the cultural domains. Thus, this idea may supply an answer to the problem which the history of aesthetics and of art have not so far succeeded in answering satisfactorily: What is art? Or, what are the lines of demarcation between art and non-art? The discussion of the nature of mindprints and their implications for the problem of the boundaries of art will require more than a whole volume, and in this essay I shall briefly consider only the most basic of all the mindprints: Connectivity - Disconnectivity.

This is almost certainly the most important attribute distinguishing figurative art from abstract art. In another essay I shall try to show that most of the differences between these two arts follow directly or indirectly from the profound difference in their levels of connectivity. Thus for example, the most profound differences can be pointed out between the two arts, not only with regard to attributes that are so essential, such as mindprints, but also with regard to many attributes and cognitive parameters that are themselves derived from the mindprints, such as: the fact that figurative art has a symbol system while abstract art has not. However, without a symbol system generalizations and abstractions cannot be carried out, since the symbol system is the ladder which makes possible ascent and descent among the levels of abstraction. There is a tendency in modern art to confuse abstraction with simplification. Indeed, every abstraction includes simplification through the elimination of all aspects that are unique to those entities with regard to which abstraction is being carried out. But the next and more important stage is the raising of the remaining aspects to a higher level of generalization as a common ground which may be pictorial, conceptual, formal or structural with regard to all of those entities. That is to say, abstraction is an analytic and a synthetic process at one and the same time, whereas abstract art is satisfied with the first stage alone: that which separates the colors and shapes from their naturalistic associations, but does not generate pictorial class-names with their help, neither with regard to the objects as did figurative painting, nor with regard to noumenal contents since, as already mentioned, this art possesses no symbol system. Paradoxically, it thus turns out that the art called 'abstract' is not abstract at all, and it is impossible to carry out abstraction in it, whereas figurative art is the only pictorial art in which there is true abstraction. Without a symbol system, no paradigm is possible in any domain, there is no general syntax or semantics, and pictorial metaphors cannot be constructed, but only

contingent and particular combinations of colors and forms. In the conceptual, the formal and also in the pictorial world, without a symbol system or a fitting syntax there are also no developed hierarchies in any work, and therefore in abstract art the extent of stratification possible is most elementary.

A thorough analysis of these differences indicates the possibility that the two arts have no important common denominator other than the banal fact that works of abstract art too are perceptible. However, the fact that a thing is perceptible is only a necessary condition for it to be a work of art, but certainly not a sufficient condition.

An exposition of these many and complex differences is of course impossible within the bounds of the present article, and therefore I shall here bring into focus only one attribute for which there is not even an adequate name. Until this matter is clarified in what follows, I shall use the term 'connectivity'. As we shall see below, connectivity is an extremely complex attribute. It is a paradoxical attribute that does simultaneously one thing and its opposite: it connects things and separates them from other things, at one and the same time. At this stage, to provide the reader with some foothold for understanding this strange idea, we may say, in borrowed terms, that connectivity has the attributes of a glue and of a solvent at one and the same time. It is difficult to imagine such a thing in the empirical world, but this paradoxical attribute is the foundation for thinking in any symbol system at all, whether this be a formal, a conceptual or a visual symbol system. The attribute of simultaneous connectivity and disconnectivity is the basis for all classification. It is this which makes all symbols, of all kinds, into tools of classification; but this attribute is not identical with classification, for in other realms such as the material, the biological etc., this attribute generates on the one hand the individuation of entities of all kinds, and on the other hand also generates their groupings at all levels. Classification is the most fundamental cognitive activity requisite for the creation of order and organization in our picture of the world, whether the latter is primitive or highly sophisticated, since classification is the means of connecting things in a differential manner. Thus, there is at the basis of every classification a paradoxical activity of connecting and separating, or combined grouping and differentiating, by means of which we divide the multitude of things in the world into classes, sub-classes, sub-sub-classes and so on.

Symbols of all kinds are the products of abstraction, and abstraction involves simultaneous processes of analysis and synthesis, or processes of both connecting and disconnecting. Connectivity-disconnectivity or codis is also the most basic attribute of all products of abstraction: formulae, concepts, figurative pictures and symbols of all kinds. This attribute is not in the least accidental, but follows from the fact that the processes of connectivity and separation found in abstraction and concept (or image) formation, are only special cases of a principle of connectivity-disconnectivity, which is immeasurably more general. It is possible that this is a universal principle found in all aspects and at all levels of being: cosmological, physical, biological, social, noetic, and all other imaginable aspects, on the macro as well as the micro level. Because of the enormous range of this subject, we shall concentrate here upon the attribute of connectivity-disconnectivity as it appears in only one sub-aspect of the noetic world: namely, art.

Every figurative painting is a system of pictorial names, but every pictorial or verbal name is a class-name, whether or not there are in the world objects to which that name applies; and whether they are many, few, one or none. A picture denoting a

sunflower denotes all the sunflowers that have been, are, or will be in the future, and it will continue to be the class-name or pictorial universal for sunflowers even if the world never sees another sunflower. A picture denoting a sunflower connects all individual sunflowers, real or fictitious, by a common denominator which is the symmetrical pattern common to all sunflowers (Avital, in press; Bateson, 1978, 1979). On the other hand, to the extent that a symbol connects, or groups together, entities with certain common attributes, so will the symbol separate those entities from all other entities in the world. While nothing can exist in either the material or the cognitive world without the complementarity of connectivity and disconnectivity, it is natural that we should be more aware of the connective aspects of symbols than of their disconnective aspects. This follows from at least two causes: firstly, in no aspect of being is there symmetry between the tendencies of connectivity and of disconnectivity. Rather is there a certain predilection for tendencies to connectivity; otherwise there would be utter and total fragmentation, and there would be no matter, no life and no thought. Secondly, the focus of our subject matter is on the product of the complementarity of connectivity and disconnectivity. This is easily understood from an example: when we look at any portrait, we focus our attention mainly upon the figure and barely notice the ground, even though without the ground the figure cannot be perceived at all. Furthermore, the fact that we do not notice the ground does not mean that the said complementarity does not exist, nor does it in any way reduce the necessity of the ground for our perception of the figure. I have deliberately stressed this matter because in this discussion too, I shall be bringing to the fore the connective aspect of symbols rather than their disconnective aspect. Thus, for example, I shall maintain that every symbol, whether verbal, formal, pictorial or other, is a connector. I shall therefore sometimes use the terms 'symbol' and 'connector' synonymously since connectivity is, as mentioned, the most important attribute of symbols. I prefer the term 'connector' to the term 'symbol' because the latter carries too many meanings, to the extent of blurring the most important attributes a pictorial symbol should denote: connectivity-disconnectivity, and systemic structure which is present on both the syntactic and the semantic level. However, the stress upon the connective function of the symbol in no way invalidates its disconnective aspect, but rather tacitly assumes it. That is to say, every connector is at one and the same time also a differentiator or dissector. Thus a picture that denotes a sunflower not only serves as a connector of all sunflowers, but also separates or differentiates the sunflower from all other flowers, and from all other entities that are not flowers. That is, a sunflowers-picture classifies certain entities as the class of sunflowers.

There is here a linguistic difficulty which is inevitably a psychological difficulty: We are accustomed to thinking in terms denoting connectivity, and we are accustomed to thinking in terms denoting separation, but there is not, at least in any language I know, a concept denoting the complementary unity of connectivity and separation together. That is to say, the most basic attribute of figurative art is neither connectivity nor disconnectivity, but another attribute of a higher level for which we have no fitting word. I am therefore obliged to propose, at least tentatively, the term Codis, derived from the first syllables of the two former terms. Furthermore, 'co' is by itself an associative and collective prefix; and 'dis' is a prefix indicating disconnection. The most basic attribute of all symbols including those of figurative art is thus the attribute I have named 'codis'. The term is not a mechanical combination of two prefixes, but rather denotes an attribute of a higher level of abstraction than either connectivity or disconnectivity by itself. Every connectivity assumes disconnectivity,

and every disconnectivity assumes connectivity. Codis is an oxymoron or paradoxical attribute that denotes simultaneously a thing and its opposite. Connectivity and disconnectivity are two opposing but complementary aspects of codis, in the way that space and time are two aspects of space-time, and in the way that yin and yang are opposing but complementary aspects of the Tao. For the layman, a paradox is a sign of trouble, but for seasoned seekers after knowledge, paradox is often the earmark of a non-trivial truth. It is now clear that codis is the fundamental attribute of every work of figurative art, and the question is, to what extent and in what sense is the attribute of codis or connectivity-disconnectivity present in abstract art?

In the noetic world, the symbols themselves are the bearers of the attribute of connectivity-disconnectivity or codis. The most important difference between figurative art and abstract art is therefore the fact that figurative art has a symbol system whereas abstract art has not. The fathers of abstract art explicitly disqualified the descriptive or denotative function of figurative art, and therefore inevitably also disqualified the means of description or the symbols of that art. On the other hand, they did not build an alternative symbol system of a different kind, but were content with breaking down the old system into the aesthetic elements or colors and forms out of which it was constructed. However, they continued to use colors and forms as though they were actual symbols and not merely the building-stones for the construction of symbols. This is like breaking down a large building into the bricks from which it was built, and then treating the bricks as though they were buildings. However, with the breaking down of the symbols of figurative art into colors, forms and arbitrary compositions, art lost its chief cognitive function: noetic connectivity by means of visual symbols; and the question is, what kind of connectivity remains in abstract art? Connectivity or codis are by no means a matter of all-or-nothing, but a hierarchy of levels of connectivity that are also of different types; such as, for example, symbolic connectivity, perceptual or aesthetic connectivity, material connectivity, and others. Each type of connectivity is in itself a hierarchy, and all of the types of connectivity are components of the total hierarchy of connectivity or codis.

So long as we are concerned with an art that requires canvas and colors, it is plain that material connectivity, present on the level of canvas and colors as materials, is a necessary condition for aesthetic connectivity, or a necessary condition for the possibility of our perceiving them⁴. Similarly, aesthetic or perceptual connectivity is a necessary condition, but not a sufficient condition for symbolic connectivity. That is, colors and forms, which are aesthetic elements, are a necessary condition for the design of pictorial symbols since they are the raw material from which those symbols are constructed. However, if we have colors and forms on the surface of a canvas, this does not necessarily imply the presence of pictorial symbols. It is true that in order to paint a bunch of sunflowers we need a certain selection of colors that includes various shades of yellow, ochre, brown, green and so on. But to have painted the canvas in these colors does not necessarily imply that we have painted a bunch of sunflowers. That is to say, if we have symbolic connectivity, we necessarily have aesthetic connectivity as well, but not the other way about, because aesthetic connectivity is a lower level cognitive connectivity than symbolic connectivity. The difference between these two levels of connectivity follows mainly from a profound difference in the levels of stratification of the organizations of colors and forms in each of these two levels of connectivity. Every object without exception possesses at least two levels of connectivity: material, and perceptual or aesthetic. There are objects such as a hammer, a fork or a car, which have

in addition to these two levels of connectivity, a third level too, which is the instrumental or functional level. And there are objects of a special kind, such as works of figurative art, which, in addition to material and aesthetic connectivity, have also the highest level of connectivity, which is symbolic connectivity. This being so, when we dismantle something, we are actually abrogating some of the connections or relations present in it, and therefore descend by one or more levels, from the original level of connectivity to lower levels of connectivity. Sometimes the descent is to a lower level of connectivity of the same type, and sometimes the descent to a lower level of connectivity transfers us to a different type of connectivity. We shall now see the significance of this in figurative art and in abstract art.

Let us suppose that we have before us a completely fresh oil painting depicting a bunch of sunflowers. In order to obliterate this painting, or turn it into an 'abstract' painting, a few strokes of a brush or knife suffice to demolish the organization of colors and shapes depicting the blooms, the leaves and the stalks. If we do this with particularly wild movements, perhaps the new product will be called 'abstract expressionism', and if we do it with gentle horizontal movements, perhaps it will be called 'lyrical abstract', and so on. The question is, what has the original painting lost, and what is left in the new 'painting'? With the elimination of the figurative symbols of the original painting, we abrogated its symbolic connectivity (codis) and left only its aesthetic and material connectivity, which is lower than that of symbolic codis. That is to say, 'abstract painting' is neither a connector nor a system of connectors, and has therefore no symbolic function: it does not connect, group, differentiate, generalize or classify anything. Since abstract art has no symbol system, every such 'painting' can be given any meaning, and this in itself tells us that it lacks meaning in precisely the same way as any pattern of colors in a Rorshach test. Goodman maintains that representation performs a double ordering: it simultaneously classifies things and also tells us into what class or classes of pictures it is itself ordered (Goodman, 1968). This argument is to my mind correct only with regard to figurative art, but does not apply to abstract art, for if everyone may attribute to every such 'painting' any meaning whatsoever that he sees fit, it follows that an 'abstract painting' classifies nothing, and each person may order it as he fancies. Furthermore, in order to give any meaning at all to this 'painting', we necessarily require extra-pictorial symbols from verbal language, because an 'abstract painting' has no pictorial means by which it might classify any entities or be classified as an object-picture of any kind such as an apple-picture, or a tree-picture, etc. The inevitable result of the breaking up and elimination of the figurative symbol system is, that instead of figurative art which served as a pictorial text, abstract art left us with objects of one kind: canvases arbitrarily painted with a few or many colors. Hence, an 'abstract painting' is not really a painting in the same sense as a figurative painting, which is a system of pictorial symbols, but an aesthetic phenomenon just like any perceptible object. But all objects of more than a certain size can be seen, touched, smelt and so on, and therefore every object without exception - whether it be a splendid diamond pendant, a dunghill, or a patch of color randomly or deliberately produced - has in addition to material connectivity, perceptual or aesthetic connectivity as well. We may clarify this matter by means of a simple example: suppose that the reader writes a poem or a story on paper, using a fountain pen, and afterwards wipes the paper with a damp cloth. In the first stage there was a verbal text or system of verbal connectors; and in the second stage, with the obliteration and erasure of the written symbols, all that was left would be an aesthetic object. In this case the object is the white paper smeared with the color of the ink, which could also be displayed as an

'abstract painting' even though it is the result of the erasure of verbal and not pictorial symbols. By erasing the text, the reader annulled the symbolic connectivity and descended to mere material and aesthetic connectivity. Since Kant it has been clear that perception is not an automatic or passive process but an active one: it entails a "combining" or connecting activity of the mind which is also the core of any cognitive activity at all levels. In Kant's words: "Combination does not, however, lie in the objects, and cannot be borrowed from them... On the contrary, it is an affair of the understanding alone, which itself is nothing but the faculty of combining a priori, and of bringing the manifold of given representations under the unity of apperception⁵." (Kant, 1787). However, the perception of an 'abstract' work requires cognitive connectivity of a fairly low level since the abrogation and fragmentation of figurative symbols in any case eradicates the stratification of the system of symbols from which the painting is built, and the symbolic, higher level connectivity that was previously present in the picture. This is to say, the fact that every work of abstract art can be perceived, is an utterly trivial fact which represents no achievement at all, because its perception is not different in any basic way from the perception of any object, except that it is often highly ambiguous. Hence it seems that the most basic confusion of twentieth century art is the confusion of the artistic with the aesthetic; it is the confusion between the world of symbols with the world of objects. That is, although all perception is cognitive, it is always of a lower level than in the case of symbolic activity, pictorial or other, because it involves simpler modes of connectivity.

Contrary to the declared or implied dreams and yearnings of the fathers of abstract art, not only did the abrogation of figurative symbols fail to raise art to a higher level of connectivity than that of figurative art, but rather did it achieve precisely the opposite! A regression in art resulted, from symbolic connectivity to perceptual and material connectivity. That is, the entirely contingent fact remains, that the canvas constitutes a surface which connects the other materials on the material level: the fibers of the canvas and the colors spread over them in an arbitrary manner. This is connection at the lowest level in nature, for it is the level at which all materials are connected and there is no need whatever for artists or art in order to achieve it. Here, there is not an additional deviation from nature, but rather an unconscious fusion within it. The evolution of civilization, and perhaps also of the universe, is the evolution of connectivity or codis. I shall only note briefly that following material and biological connectivity, came the era of noetic connectivity of which culture is the explicit expression. Figurative art is like all other symbol systems that emerged within culture; beginning with language, through totemism, mythology and religion, philosophy and up to modern science, it is a sub-process in the evolution of noetic connectivity and therefore also a sub-process of the total evolution of codis. I believe that it is possible to point out a continuous and remarkably consistent process of evolution of codis from the big bang and up to contemporary science. Until the beginning of tool making some 2.5 million years ago, the evolution of codis was mainly on the material and biological plane, and only subordinately on the noetic plane as well. But since the invention of tools and, following that, the emergence of natural language, and later still the invention of image making, the evolution of codis has been almost solely on the noetic plane, and at an immeasurably increased rate than before the development of language and prehistoric art. Abstract art has no evolutionary function in this great scheme, but rather a devolutionary one.

In its broadest sense, 'codis' is only another name for the dialectic or complementarity of unity-diversity (or being-becoming), which has been the main line of development of human culture in general, and of philosophy and science in particular. Indeed the problem of unity-diversity was explicitly the chief problem of Greek philosophy from its beginning, but the Greeks did not invent this problem ex nihilo. In fact, every symbol system that preceded philosophy was an implicit attempt to propose a special way of creating unity through diversity. Some of these solutions were far less rigorous than the solutions presented throughout the history of philosophy, and later in the history of science, but their end was similar. So it was with natural language, and so it was with totemism, mythology (especially Creation myths), and religion; the same applies to figurative art from its prehistoric beginnings and to this day.

Figurative art was one of the principal channels in the great dialectic game of unity-diversity because it had several levels of connection, in addition to the material-perceptual level of connectivity which is anyway present in every object and also in works of abstract art. The second level of connectivity of any figurative painting exists by virtue of its being a symbol or pictorial class-name, and it thereby functions as a means of grouping or unification of all the entities for which it serves as a label or pictorial name. In this respect there is no difference between a pictorial symbol and a verbal symbol; however, paintings have further attributes of unification which words do not possess. A third connective attribute of figurative art follows from the fact that the symbols of that art are not arbitrary configurations, but rather do they preserve to one degree or another symmetry of a relativistic nature, with regard to the subjects they represent (Avital, in press). Symmetry is a pattern that connects all entities that have a common pattern (Bateson, 1978). This symmetry is the meaning of the abstraction in figurative art, and this is the special way in which figurative art creates a connection between things. Like connectivity-disconnectivity, the symmetry spoken of here is also in fact a complementarity of symmetry-asymmetry. In another essay I have shown that this mindprint too is present only in figurative art, but not in abstract art. (Avital, in press.) Figurative art has a fourth source of unity, and that is the systemic or hierarchic structure present in every figurative painting. That is to say, every figurative painting is a system of symbols of one level of complexity or another, and there is therefore a structural homology among all figurative paintings. This systemic connectivity which integrates all symbols at all levels, is decisive in the creation of the structural unity that emerges in the vast multiplicity of figurative paintings. That is to say, systemic structure confers connectivity at a structural level upon the figurative symbol system, even without any necessary connection with the specific symmetry that every symbol maintains with regard to its subject. Here, there comes into prominence on the macroscopic level the parallel between the systemic structure of the figurative symbol system and the systemic order inherent to the objects which those symbols are intended to represent. Both share hierarchical order, only one is at the noetic level and the second is at the physical or biological level. Again, like connectivity-disconnectivity and symmetry-asymmetry, hierarchy too is a mindprint that is a complementarity, of hierarchy-randomness. In another essay I shall show more comprehensively that this mindprint is indeed present in figurative art alone, and not in abstract art⁶.

Since the only connectivity of abstract art is on the material and perceptual level alone, like the connectivity of any object, obviously this 'art' has no function in the design of tools for the greatest of culture's games: the dialectic of unity and diversity.

Instead of this, abstract art succeeded in creating a very strange anomaly: unity without differentiation, like the extreme minimalism of monochrome; and it likewise succeeded in creating differentiation without any unifying principle, as in Abstract Expressionism. However, no creation worthy of its name - whether it be in the physical, the biological, or the noetic world - can exist solely by virtue of unity, nor solely by virtue of differentiation: neither through order, nor disorder, alone. Every symbol, and every work, stands precisely on the dialectic of these two. This anomaly of abstract art is only one expression of the more basic pathology which can also be expressed in terms of entropy and its opposite, negentropy. Connectivity is to a large extent an expression of negentropic tendency since connectivity is another name for increase of order. On the other hand, disconnectivity is to a great extent an expression of entropic tendency, since every disconnectivity is to a great extent the expression of a reduction of order. Existence on all levels: the physical, the biological and the noetic - including, of course, art - is conditioned by a certain imbalance between the tendency to entropy and that of negentropy in such a way that the connective tendencies, or negentropy, are to one degree or another stronger than the separative, fragmenting tendencies, or entropy. It may in fact be said that the existence of mind and reality, or even better, the complementarity of mind-reality, is conditioned by this imbalance.

Art is a special case of the noetic world and, like life itself, is dependent upon the complementarity of the two tendencies, but in such a way that the connective tendency or negentropy, must be stronger than the fragmenting tendency or entropy, for otherwise there would be no life, language or true art at all. One of the most basic differences between figurative art and abstract art lies precisely in the fact that even if in both of them there is a dialectic of the two tendencies, then it is present in completely different ways: in figurative art, as in nature, the negentropic tendency is dominant, whereas in abstract art, as in every disintegrative process, the entropic tendency is dominant. In other words, abstract art is in a sense figurative art in which the dialectic balance between the complementary components of *codis* has been upset in an extreme manner, towards the pole of disconnectivity. In the middle of the previous century there was an imbalance in the opposite sense: Academicism upset the balance of *codis* towards the pole of connectivity, because it froze certain rules of organization or connectivity of Realism. Impressionism was the attempt to create a new balance by increasing the element of disconnectivity. But the Impressionist amendment was effective for only a very short while, because the figurative paradigm had in fact been exhausted. More generally: every extreme imbalance of *codis* toward one of its poles, must lead to the opposite imbalance toward the opposite pole for an intermediate period, until a new balance of its two complements is achieved, but on a higher level. It seems that this principle is present in every aspect of being: in the physical world, the biological world, the social world, and also in the noetic world: a black hole in which the connectivity of matter is most extreme must eventually evaporate and cease to exist; creatures which do not adjust to changes must become extinct as did the dinosaurs; a cancerous growth eventually destroys the organism and inevitably itself as well; dictatorships frequently lead to anarchy, and anarchy to dictatorship, until wisdom leads to democracy. Academicism will eventually lead to a new art, but at the inevitable price of an intermediate period of anarchy which we call abstract art or in a more general term, non-representational art. It may be that the most magnificent expression of this principle is the story of the Creation according to the 'Big Bang' theory: in the beginning the whole universe was enfolded in a singular point which was a state of total connectivity, and the Creation was the transformation to a state of radiation, which was

a state of total disconnectivity; and with the start of radiation began the emergence and connection of particles from which our universe was built. It may be no accident that all creation myths maintain that in the beginning there was unity or homogeneity of one kind or another, and that the interference by some entity then caused differentiation within this unity, and that the world was thus created and all that is in it.

Since the most basic dynamic of the evolution of codis in civilization is that of ever-growing connectivity, it is clear why figurative art had to leave the cultural stage, for this art had long exhausted its potential of connectivity, generalization and metaphorization. This is also the reason for the disappearance of totemism and mythology; and perhaps the end of philosophy has now come, since we may have exhausted the potential of generalization and conceptual thought. However, since abstract art has abrogated the symbolic connectivity of painting and retreated into aesthetic and material connectivity alone without offering a new level of connectivity, this art does not represent an additional step in the evolution of art or of culture, but rather represents a devolutionary phase in art and culture. I believe that the situation of art today is the expression of a necessary regression, but a temporary one, until such time as a new way is discovered of creating noetic connectivity in art at a higher level than that achieved by figurative art. In my coming essays I shall continue to uncover the many other attributes that distinguish figurative art from abstract art. This work is essential in order that the art world may begin to become convinced that perhaps abstract art is not a new art born in the 20th century, but the debris of the 40,000-years old art. However, it has a very important role in the evolution of art: it is a necessary intermediary stage between the previous art whose time has expired, and an art of the future which has not yet arrived; but the verge of which the far-sighted can already see on the horizon.

NOTES

1. In another essay (Avital, 1996b) I have presented a quite thorough criticism of Goodman's theory, and also discussed there more extensively the argument under consideration.
2. There is a certain similarity between the idea of mindprints and the theory of categories in the history of philosophy, but there are also profound differences between them, for the discussion of which this is not the place.
3. An outline of mindprints theory and its implications for the origins of art is presented in Avital (1997a, 1997b). A more comprehensive discussion will be presented in my forthcoming book: Hand Tools - Mind tools: Introduction to Mindprints Theory.
4. I ask the reader to bear in mind that I use the word 'aesthetic' in its Greek original sense of 'perceptual', and in the context of this essay it should not be regarded as having any meaning connected with beauty and other predicates that have been associated with the term throughout its long history.
5. However, in this there is a concealed assumption, namely that there is no need for a special a priori capacity in order to understand or create the "manifold of given representations" as such, since plurality is "given". The concept of Codis reveals a different understanding of the mind, in that it does not only connect and create the awareness of unity, but is at the same time also that which separates and creates the awareness of plurality. That is to say, these two attributes of unity and non-unity, are two complements or poles of the same function of the mind or of the same mindprint.
6. It can likewise be shown that none of the other mindprints is present in abstract art. More precisely, it can be shown that insofar as mindprints are present in that art, they are present in a distorted form: they are not present as complementarities, but in most cases an extreme tendency is generated towards one pole or the other.

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