

ABSTRACTION IN ART

by

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ABSTRACTION IN ART.

The Abstract. (1)I. Statement of the problem.

The subject of abstraction is of very great importance not only in science, in logic and mathematics, or in the theory of knowledge, but also in art.

It might be said that abstraction is a process in which consideration is given to some aspect or feature of a complex whole to the neglect of the remainder; but this statement is both too vague and too restrictive to cover all the cases in which abstraction is commonly said to occur. In order to avoid here the mistake involved in the "paradox of analysis", exemplified by saying that "centaur" and "medusa" mean the same thing (since there never was either the one nor the other), it is necessary to recognize that the abstractness of a work of art is something quite different from that of science, mathematics, logic or epistemology. This difference does not lie in the meaning of "abstraction", but in the purpose for which abstraction is used.

In both art and science abstraction is the recognition of a

- (1) All acknowledgements of indebtedness to sources are to be found in the text.

relational structure or "form" apart from the specific thing in which it is exemplified. But the word "form" has different meanings in various fields. A logician or mathematician may question what sense it makes to call anything "form" except the logical form of discourse, the structure of propositions expressed either in ordinary language or in the refined symbolism of the pure sciences; an artist, in his turn, may ask how one can speak of the "form" as something invisible and intangible, as for example, the series of natural numbers, or elaborate mathematical equations, when for him "form" must be sensible.

The problem of abstraction in art is complicated further by the fact that, although, (speaking of painting and sculpture) abstraction is achieved by the use of the technical device of schematized shapes (usually called "abstractions"), contemporary art critics and artists are divided as to how abstraction "works". Roughly speaking, they are divided into two camps, and the defence of each position rests on a different view of the world.

One theory of art experience presupposes a world consisting of mysterious entities which, by interaction with another equally mysterious entity, the ego, produce sensations. Configurations of these sensations result in artistic form in two basic varieties: one, the naturalistic, the product of an "affirmative" attitude toward the world, is bound to concrete experiences, in fact, to physical things; the other, the non-naturalistic or "abstract", the consequence of "negative"

attitude toward the world, essentially artificial and difficult, results from modern man's "dread of space" or "fear of nothingness", etc. I shall call this theory in its two aspects the "existentialist theory" of art experience.

Another theory of art experience takes a rational view of the universe (recognizing, however, certain limits to man's reason) and proposes that that experience is closely bound up with sense perception and cognition analyzable in logical terms. In this tradition abstraction is viewed as an intellectual process, capable of being discussed in terms other than "positive" and "negative". Accordingly, the work of art is so constructed that its categorical elements are in common with reality, and combined to represent a coherent structure. Abstraction in art is defined as the constant experimenting with syntactical combinations of the language elements of that special type of language which is the actual work of art. I shall call this the "rational theory" of art experience.

Discussion of this view of abstraction will involve the discussion of what is meant by "work of art", "internal" and "external" logic of the structure of works of art, what I mean by such banalities as "reality" and "truth". In a word, the discussion will turn upon the meaning and purpose of all artistic activity.

II. Method of investigation.

In discussing the problem outlined above I am not going to declare which of the two views of the world is right, which is wrong, but I will support the theory which appears to me the more exciting and which seems to afford the more satisfactory explanation of what is meant by abstraction in art.

In doing it I shall use as supporting arguments my own conclusions about works of recent and contemporary masters along with quotations from their manifestos, autobiographies and other writings, as well as the ideas of critics and historians about them. Also I shall not shrink from using classical sources, because, to my mind, the phenomenon of abstraction cannot be reserved for contemporary art alone.

It cannot be denied, however, that the use of the adjective "abstract", synonymous with "modern", "non-objective", "non-representational", etc., has become quite frequent and has acquired special importance since the turn of the century. The term "abstract art" is generally understood as denoting cubism, futurism and expressionism, and demonstrating a common effort on the part of contemporary artists, musicians and writers on the one hand, and scientists, philosophers and mathematicians on the other, to solve similar or identical problems. Therefore some attention will be directed to contemporary developments in these disciplines along with art.

In my treatment of the subject I shall stress the philosophical implications rather than the historical significance. Above all, my approach will be determined by the influence upon me of the Cambridge philosophers and the adherents of philosophical movements related to them, but especially the writings of Ludwig Wittgenstein will be seen to have inspired the concepts developed in this thesis.

III. General conclusions.

The general conclusions arrived at in this thesis might be stated in the form of the following principles:

- (a) All art is abstract.
- (b) In art the aim is to depict reality.
- (c) A work of art is constructed so that its categorical elements are in common with reality and combined to represent a coherent structure (correspondence theory).
- (d) A work of art is an interpreted fact, and thus represents a prototype truly or falsely. Truth is arrived at when inquiry is stopped.
- (e) Since the elements of a work of art are combined in a definite way, its truth value will be determined upon the examination of the "internal" logic of its structure, together with the "key of interpretation."
- (f) It makes sense to say that there are many realities and one way of interpreting them, just as it makes sense to

say that there is one reality and many ways of interpreting it.

(g) Abstraction in art is the constant experimenting with syntactical combinations of the "language elements" of that special type of language which is the actual work of art.

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Chapter I.

Introduction.

Sense perception and cognition are closely bound up with art experience. We find that the way these concepts are analyzed by the logical positivists or by the philosophical analysts (1) makes sense in aesthetics. In short, such notions as abstraction in art, when analyzed, on the one hand, in the logical positivist tradition, seem to afford a satisfactory explanation as against other accounts of how abstraction in art is achieved which present us with conceptual muddles or seem to us less complete.

- (1) The ideas expressed in this thesis are derived largely from the writings of Ludwig Wittgenstein (1889-1951), and especially from his Tractatus Logico-Philosophicus, London: Routledge & Kegan Paul, 1922 (7th impression, 1958). Although his writings and teaching at Cambridge, with some interruptions from 1930-1947, gave impetus to the "logical positivist" and "logical analyst" movements, it is debatable whether Wittgenstein properly belongs to these philosophical movements.

I am using the term "logical positivists" widely to refer to the "Cambridge Philosophers" (Bertrand Russell, G. E. Moore and Wittgenstein), the "Vienna Circle" - a group of philosophers which included Moritz Schlick, Rudolf Carnap, and others, as well as disciples of Wittgenstein. The logical positivist movement is well described in A. J. Ayer, ed., Logical Positivism, Glencoe, Ill.: Free Press, 1959. See especially pp. 3-28, "Editors Introduction", and pp. 381-446 for bibliography on the movement.

For the biography of Wittgenstein, see: Norman Malcolm, Ludwig Wittgenstein, a Memoir, London: Oxford U. Press, 1958.

We will take as the point of departure for our discussion a definition of abstraction in art, then we shall construct a theory of how abstraction in art is achieved; an unavoidable digression, or so it might seem, into logic will lead us to a discussion of problems connected with contemporary art which will occupy the next chapter of this work.

It makes sense to say that in art "we make to ourselves pictures of facts."⁽²⁾ To think is to form pictures - this, we assume, is how artists (and here we include musicians, sculptors, architects, actors, dancers, etc.) understand the world. Just as the composer thinks of the world in terms of ordered and interrelated tonal events that unfold in time, so the painter thinks of the world in structures of interrelated lines and colour. But just as the composer need not in his music imitate the sounds of nature by using, for example, the flute to sound like a bird, so also the painter need not have a thought of "red" and "green" as elements in a picture of red flowers and green leaves; there must be only a structural similarity between a picture and what it claims to represent. It is in this sense that we define abstraction in art as the recognition of a relational structure apart from the specific thing in which it is exemplified.⁽³⁾

For the purpose of exemplifying structural similarity between

(2) Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, 2.11.

(3) S. K. Langer, "Abstraction in Science and Abstraction in Art", in P. Henle, H. M. Kallen, S. K. Langer, eds., *Structure, Method and Meaning* (Essays in Honour of Henry M. Sheffer), New York: The Liberal Arts Press, 1951, pp. 171-183.

a picture and what it represents, I am using the following simile⁽⁴⁾:

Let us imagine two parallel planes, I and II. On plane I figures are drawn, say, ellipses and rectangles of different sizes and shapes, and it is our task to produce images of these figures on plane II. Then we can imagine two ways, amongst others, of doing this. We can, first, lay down a law of projection - say that of orthogonal projection or any other - and then proceed to project all figures from I into II, according to this law. Or, secondly, we could proceed thus: We lay down the rule that every ellipse on plane I is to appear as a circle in plane II and every rectangle as a square in II. Such a way of representation may be convenient for us if for some reason we prefer to draw only circles and squares on plane II. Of course, from these images the exact shapes of the original figures on plane I cannot be immediately inferred. We can only gather from them that the original was an ellipse or a rectangle. In order to get in a single instance at the determinate shape of the original we would have to know the individual method by which, e.g., a particular ellipse is projected into the circle before me.

It is my view that the case in art is quite analogous.⁽⁵⁾ The elements of the picture - the circles and squares in plane II - deputize, as it were, for the facts of reality - the ellipses and rectangles on plane I. The second projection method (described in the simile) is found to be characteristic of the method of abstraction in, e.g., cubist

(4) Ludwig Wittgenstein, "Some Remarks on Logical Form", in Aristotelian Society Supplement, vol. IX, 1929, p. 164.

(5) Wittgenstein says: "The case of ordinary language is quite analogous". While paraphrasing Wittgenstein, I am not equating "ordinary language" with "art". My point is, as will be seen later, that some art can be compared with the case in "ordinary language", whereas some other is as involved conceptually as, say, "pure" mathematics.

or neoplasticist art, but the orthogonal projection may very well represent a less intellectual way to describe visual data, such as that of the lens of the eye or the camera recording the scene. On the strength of what was said in the simile, we will suggest that every picture (composition, sculpture, etc.) presupposes a key of interpretation, and that it is the function of the pictorial (musical, sculptured, etc.) elements to furnish it with such a key, if we are to understand the creation (painting, etc.) "in a single instance". The implications of this suggestion will have to be scrutinized in due course.

So far we have been talking about abstraction manifest specifically in art. How is our concept related to what is generally understood by "abstraction"? An explicit description or analysis of what the term means is not an easy task; it presupposes an oversimple conception of how thinking proceeds, and it requires an investigation of the purpose of the process of abstraction in each specific case; in mathematics and logic, in classificatory sciences, in lexicology, etc., which would take us far from our topic. But to disregard the various applications of the term would be like saying that "centaur" and "medusa" mean the same thing, since there was neither the one nor the other. "Abstraction" has not always the same meaning, nor is it ambiguous: there is one generic meaning of "abstraction" and n specific meanings. But definitions will get us nowhere; let us not trouble ourselves about a definition which will give abstraction "an essence". In order to get a better understanding of its significance, we shall consider briefly, as

suggested earlier, mathematics and logic, sciences and lexicology, before resuming discussion of abstraction in art.

Pure mathematics, it has been said, is the most abstract of sciences in that it makes no reference to the actual world, and in that the truths of mathematics can be known by thought alone. When we think of mathematics, we have in mind not only a science devoted to exploration of number, quantity and geometry, but also including investigation of yet more abstract concepts of order and into analogous types of purely logical relations. Sciences are said to be less abstract than mathematics in that they take notice of particular occasions in order to verify general propositions (and general propositions involve abstraction). Classificatory sciences involve abstractions that are expressible in general propositions which are related to, or are given in, sensible experience, and thus are abstract in lesser degree than mathematics. History also involves abstraction, "for whatever can be communicated is abstract. But the historian who is concerned with what has happened may be said in a sense to avoid this inevitable abstraction by a description which accumulates details so as to be relevant to one given occasion only. Thus history is the least abstract form of knowledge."⁽⁶⁾

To come down towards the concrete, take as an instance the notions in mathematics of "number" and "same number". Professor A. N. Whitehead says:

- (6) L. S. Stebbing, *A Modern Introduction to Logic*. London: Methuen & Co. Ltd.; (1930), 7th edition, 1953, pp. 445-6. The italics are Miss Stebbing's.

We think of the number 'five' as applying to appropriate groups of any entities whatsoever - to five fishes, five children, five apples, five days ... During a long period, groups of fishes will have been compared to each other in respect to their multiplicity, and groups of days to each other. But the first man who noticed the analogy between a group of five fishes and a group of five days made a notable advance in the history of thought. He was the first man who entertained a concept belonging to the science of pure mathematics.⁽⁷⁾

The abstraction of "number" from the notion of any particular set of entities led to an equally important conceptual feat, that of abstraction of the notion of symbols in form of algebraic or "unspecified numbers" from the notion of any particular numbers. The notions of numbers "one", "two", "three", etc., can be written in so many ways. We use Roman numerals (I, II, III ...), Arabic numerals (1, 2, 3 ...), in Hebrew they are written as the first three letters of the alphabet, and there is no end to various possible number systems of the same structure one can invent. The recognition that these individual systems have the same structure has suggested that they are interchangeable, i.e., they are isomorphic, which means that each number of one system has a counterpart in the other system and that the results of computations in one system will correspond to the results of computations in the other system.⁽⁸⁾ Obviously, there are number systems of structures different from the ones just presented in that they are not interchange-

(7) A. N. Whitehead, Science and the Modern World, N.Y.: Mentor Books, (1925), 9th ed. 1959, pp. 25-26. This is based on the famous definition of number by Gottlob Frege.

(8) Adler, Irwing, The New Mathematics, N.Y.: Signet Science Books, 1958, p. 26.

able. We shall return to this point when discussing various "systems" in contemporary art.

Presently it is only to be noticed that the notion of the "same number" has led to the idea of sameness of structure in different systems and thus to the idea of algebraic symbols, which are nothing else than the general form of number⁽⁹⁾ represented by substitute signs. Such signs can only occur when there are fixed rules of manipulation or operation together with a key of interpretation of the signs. Moreover, the importance of number in man's conceptual achievement lies in that the study of number has led to the discovery of the nature of reality. Mathematical structures are sometimes said to be "pure" structures. When apprehending in mathematics, for example, a finite series of natural numbers, there is no predicative element involved: it is apprehended as an unspecified "picture", and the attention is paid only to the relational structure of the elements. So also one point of space, considered by itself, is indistinguishable from another, and so is a straight line, or a plane, or one of a number of congruent bodies or areas or line-segments: they are distinguishable only when conjoined as elements in a single total intuition. Now, on the one hand, one could consider arithmetic as concerned only with the rules governing the manipulation of the arithmetical signs, and not with the reference of these signs called "numbers" or "quantitative ratios"; this kind of arithmetic we could term "formal" arithmetic.

(9) L. Wittgenstein, Tractatus, 6.02.

In formal arithmetic we need no basis for the rules of the game; we simply stipulate them by introducing figures with rules for their manipulation. On the other hand, one could adopt a standpoint of a meaningful arithmetic in which the numerical signs have references, i.e., they have sense (these signs signify different things in different contexts) and therefore the "meaningful" arithmetic has a bearing on life.

As Gottlob Frege has shown,⁽¹⁰⁾ formal arithmetic proved unable to define the irrational (for it had only a finite number of numerical figures at its disposal), and although the formalists regard their approach to arithmetic as relieved of the need to supply reference for the signs, they unconsciously borrow terms and expressions from meaningful arithmetic without explanation.

The signs, whether in mathematics and logic or in art, is the part of the symbol perceptible by the senses⁽¹¹⁾, and it is arbitrary until we affix the rule that we are not to apply the same sign in different symbols, and that we are not to apply signs in the same way which signify in different ways in what to the eye appears as the same way. Such symbolism is said to obey the rules of logical grammar - of logical syntax⁽¹²⁾. If a certain system (number system, language, art form) possesses a "logical syntax" it is a "logical system"; if not, let us

(10) Gottlob Frege, Grundgesetze der Arithmetik, 1903; vol. II, Sections 86-137. Translated by Max Black in Translations from the Philosophical Writings of Gottlob Frege, Oxford: Blackwell, 1960 (1952).

(11) Wittgenstein, Tractatus, 3.32.

(12) ibid., 3.325.

call it an "ordinary system". The term "ordinary system" here is not used to designate an illogical system, i.e., not one that is diagonally opposed to a logical system, but one into which we project in ever so many different ways ever so many different logical forms. And for this very reason we can draw no conclusions - except very vague ones, from the use of these norms as to the logical form of the phenomena described⁽¹³⁾. These considerations will have a bearing upon the forthcoming examination of the process of abstraction involved, for example, in the De Stijl movement which in its tendency toward a logical extreme of mathematical abstraction is most strikingly represented by the works of Piet Mondrian, i.e., neoplasticism, and which has influenced the architecture of Walter Gropius and Le Corbusier.

If it is true that in art to think is to form pictures, and if this is how artists understand the world (which one will not deny at least for some artists), the problem facing us is as follows: in our superficial examination of man's conceptual effort we saw that progress in forming ideas depended entirely on man's capacity to abstract and generalize. We saw also that mathematics and logic called into play a higher level of abstraction than other sciences, because, it has been said, "no reference to the actual world is involved in any mathematical proposition".⁽¹⁴⁾ But if we distinguish in art between "logical systems" and "ordinary systems", and if we assert that, e.g., the De Stijl movement

(13) L. Wittgenstein, "Logical Form", op. cit., pp. 164-165.

(14) L. S. Stebbing, op. cit., p. 446.

tends toward a logical extreme of mathematical abstraction, then are we not saying that such movements in art involve no reference to the actual world? This would contradict strangely the statement that artists form pictures of the world.

One way of solving this problem would be to show by the recursive argument that even though it is said that mathematics as a pure science does not refer back to any given set of particular occasions, according to the experts on the subject we have quoted this cannot be so. We may ask, what does pure mathematics refer to? - The answer is, to antecedent mathematical knowledge which in itself is an abstraction from a given set of particular occasions, for example: number "five", which in its turn refers back to given sets of particular occasions, such as five fishes, five children, five apples, and five days.

Another way of solving this problem would be to probe into the aims and ideas of the artists bent on making what are generally known as "abstract" pictures. This will be the subject of the third and fourth chapters.

Chapter II.

Percept and Concept in Art.

Modern times find themselves with an immense system of institutions, established facts, accredited dogmas, customs, rules, which have come to them from times not modern. In this system their life has to be carried forward; yet they have a sense that this system is not of their own creation, that it by no means corresponds exactly with the wants of their actual life, that for them, it is customary, not rational. The awakening of this sense is the awakening of the modern spirit.⁽¹⁾

Since Matthew Arnold wrote these words the modern spirit has demonstrated itself in the visual arts in impressionism, pointillism, neoimpressionism, fauvism, expressionism, cubism, futurism, suprematism, neoplasticism, dadaism, surrealism, constructivism, nonobjectivism, etc.; and this list of modern art-isms can be easily expanded. If the vocabulary of a people affords direct testimony as to its interest in what it observes, then the modern artist undoubtedly is endowed with a multiple vision. In all ages and periods of Western art we distinguish various schools and styles, but the homogeneity of works of any one time preceding the modern becomes striking in comparison with the phenomenon of multiplicity. The phenomenon of multiplicity seems to be the distinguishing mark of the modern art. This statement will require treatment further on, but perhaps we need to realize at once that the "modern spirit" spoken of by Matthew Arnold is distin-

(1) Matthew Arnold, Essays in Criticism, First Series. London: Macmillan & Co., 1898 (1865), pp. 159-160.

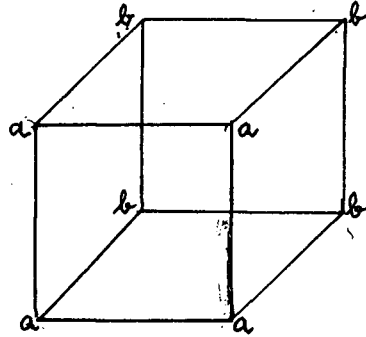
guishable from the "not modern" in art primarily if and only if it does not substitute the traditionally eternal and absolute Beauty with an equally eternal and absolute essence of "Modern" or "Abstract Art".

The realization, on the one hand, that the world lends itself to be projected in so many different structures of interrelated lines and colour, not only in the "customary" forms but in ever so many different logical forms, accounts for this proliferation of art movements and schools. The particular character of the various art-isms proceeds from the various thoughts and ideas in the artists' minds, i.e., it has a rational basis. On the other hand, the immense system of institutions, established facts, accredited dogmas, customs and rules organize, so to speak, the field of perception in such a way that those facts emerge that are of theoretical or practical interest to the person perceiving; the field of perception is analyzed so that what could be called "relevant" facts emerge. And what things and predicates are perceived depends on what facts are relevant. Thus it seems that in the final analysis the basis for a new art form, school, or movement is customary and based on tradition, i.e., it seems to be non-rational.

It was already said in the beginning of this thesis that in art the world is expressed as a "fact" and not as a "thing". That the elements of the picture are combined thus or thus represents that objects are combined thus or thus. To perceive a complex means to perceive

that its constituents are combined in such and such a way. To demonstrate: that the figure can

be seen in two ways as a cube shows how one and the same object is really seen as two different facts; what appears to



be the front plane (for example, "a") in one case, is the back plane in the other, i.e., when the other plane "b" is seen as the front plane. A curious image is created when both the plane "a" and the plane "b" are seen as the front plane (I am capable of seeing the ambiguous figure thus only for a brief moment before it takes on a definite appearance) - the figure, then, can be seen as "fact" in three ways.

Now, since the individual perceives the world in such a way that those facts emerge which are of theoretical or practical interest to him (and what things and predicates are perceived depends on what facts are relevant), it would seem that the individual is tied permanently, so to speak, to his past experience, and his interpretation of the perceived data, the analysis of the complex into constituent parts is completely determined by his experience. However, as we have seen by looking at the figure, one and the same object can be seen at least as three different facts without any prior experience. (2)

- (2) cf. Wittgenstein, *Tractatus*, 5.5423 and 5.552. The latter entry says: "The 'experience' which we need to understand logic is not that such and such is the case, but that something is; but that is no experience. Logic precedes every experience - that something is so. It is before the How, not before the What."

According to our thesis, to think is to form pictures. For the composer to understand the world is to think in terms of musical structures, for the painter - in structures of line and colour. Since musicians and painters are contemplating the same phenomena, i.e., the world of facts, it seems that their discourses are translatable. (3) Moreover, it seems also that just as there are distinguishable various levels in conceptual difficulty in music, there are corresponding conceptual levels in visual art. For example, just as one can imitate in one's music the sounds of nature by making the flute to represent a bird, or, by the use of certain instruments, mechanical noises such as a working machine, so also the painter can imitate, for example, the human figure by drawing its silhouette. Let us call this the "imitative" level. Some composers use a symbolic device, leitmotif, a theme associated throughout the work with a particular person, situation or sentiment, so that even out of its context we tend to regard a particular theme as a symbol for a particular thing. In the visual arts some symbols, such as the cross, are universally associated with only one idea (event, or person) while others are less universal. Let us call this the "iconological" level. On another level music might be made to suggest emotion by way of rhythmic configuration and/or clusters of sounds; painting also can be employed to create emotional response (body rhythms and emotional states) by certain arrangements of lines and colours. Let us recognize this as the "psychological" level. Yet another set of principles

(3) Here comes to mind Picasso's aphorism: "To draw, you must close your eyes and sing."

for musical creation is derived from the science of accoustics, whereby investigation of overtone series provide all sorts of ideas, and these ideas dictate the rules according to which sounds ought to be used; optics likewise is employed in painting to suggest and regulate the use of painter's materials. This will be known as the "scientific" level. Then there are composers who hold that music means nothing outside itself. They say that the fugue, for example, implies the composer's submission to certain musical rules, and that within structures such as these he finds the full flavouring of his freedom as a creator. To mention a few analogical examples in visual art, the rules of linear perspective, or the De Stijl movement, with Mondrian as its purest representative, will exemplify the "tautological" level.

Needless to say, it is seldom that a work of art will represent one and only one conceptual level, and in one and the same work various principles can be utilized. As an example in music take Beethoven's Pastoral Symphony: although this work is generally recognized as imitative, it is difficult to define it as on a purely imitative level, rather it might be understood as embodying five principles - the imitative, the iconological, the psychological, the scientific and the tautological. Where the flute trills like a nightingale and where the oboe repeating a note imitates the characteristic rhythm of the quail, while the falling third in the clarinet stands for the cuckoo, the music is of a conceptually simple kind; the first movement, "Awakening of serene impressions on arriving in the country: Allegro ma non troppo", reminds us

of the phenomena of floral growth, where simplicity and charm of surface conceal infinite variety and organic intricacy because of the drone-like repetition of fragments from the themes in a sort of murmuring monotony, continuously and subtly changing in tonality, colour and position. We shall assume that the music for which "Allegro ma non troppo" stands ought to be understood as an icon (description) for "Awakening of serene impressions on arriving in the country". A listener, ignorant of the fact could miss the point, yet be deeply moved by the music. Finally, the whole of this music follows a systematically worked-out pattern capable of expression in mathematical formulae.⁽⁴⁾

Similarly, Marcel Duchamp's "Nude descending a staircase"^{#2}, 1912 (Philadelphia Museum of Art), an imitative painting on one level, is imitative of a figure in descending movement, thus depicting the reality of the visual form of a moving figure; and on another level it is a work with extensions beyond the imitative level, in that the language elements of the picture which at first sight have the apparent effect of "an explosion in a shingle factory", more reflectively present themselves as organized into a pattern of logical order with the aim to present the idea and the values in question consistently. The nude's motion could be analyzed, to use the phrase, "as a collection of parts that work to-

(4) This is an assumption. Prof. E. E. Leimanis tells me he has analyzed and expressed in mathematical symbols a J. S. Bach fugue. Although Beethoven's 6th Symphony is not as clear-cut a proposition as is a Bach fugue, I do not see why it could not, theoretically, be equally well expressed as a mathematical proposition.

gether to achieve a common function".⁽⁵⁾ It is doubtful whether the "Descending Nude", the happy result of "Duchamp's battle of logic"⁽⁶⁾ can be easily expressed in mathematical equations, but, as we have noted earlier, e.g., Mondrian's oil, "Composition with Red, Yellow and Blue", 1921, (Gemeente Museum, The Hague) could be expressed in a mathematical equation. The significance of the realization that art is not shackled only to imitative depiction of the natural world, nor to symbolic representation of a Heavenly City, lies in opening up for the artist new horizons, as has been well recognized by most of the modern artists. Perhaps the assertion that art has a logical (or rational) basis is hard to swallow; it might be more easily acceptable to those who do not see eye to eye with this if we realize that logic (and mathematics, which is a logical method) is not a theory but a reflexion of the world. Logic is transcendental ⁽⁷⁾ in that it transcends the immediate occasion. And since in art we are dealing with properties which admit of gradation, such properties as the length of an interval, the pitch of a tone, the brightness of a shade of colour, continuous transitions, and combinations in various proportions, with forms of space and time, numbers can enter these forms if we so choose. One shade of colour cannot simultaneously have two different degrees of brightness,

(5) Bates Lowry, The Visual Experience, N.Y.: Abrams, Englewood, N.J.: Prentice-Hall, 1961; pp. 222-227.

(6) Robert Rosenblum, Cubism and Twentieth Century Art, N.Y.: Abrams, 1960; p. 152.

(7) L. Wittgenstein, Tractatus, 6.13.

nor a tone two different strengths. It is characteristic of these properties that one degree of them excludes any other.(8)

The idea of numbers being inherent in art goes back to the Pythagorean creed that everything is arranged according to number, from which Plato's mathematical philosophy and his system of aesthetics evolved.(9) Platonism, it is said, developed from the confluence of two streams of inspiration - the Socratic and the Pythagorean. From Socrates Plato learnt that the problems of human life were to be solved by the morality of aspiration and the pursuit of an invariable ideal of perfection; from Pythagoras he discovered how this conception could be extended beyond the field of human concerns into a system embracing the whole of nature and transforming the scope of science. The germ of Pythagoras's mathematical philosophy, curiously enough, was a discovery, not in the field of arithmetic or geometry, but in music. This he connected with the doctrine of the immortality of the soul and mathematics. Dryden, keeping strictly to an old tradition, wrote in 1687:

- (8) I termed the logical approach to art "tautological" because remarks such as these do not express an experience but are in some sense arbitrarily imposed systems.

For what follows I am mainly indebted to the sources:

- (9) Burnet, John, Early Greek Philosophy, 2nd ed., London: Black, 1908. R. C. Lodge, Plato's Theory of Art, London: Routledge & Kegan Paul, 1953; and F. M. Cornford, From Religion to Philosophy, N.Y.: Harper's Torchbook, 1957, (Arnold, 1912).

As Cornford shows, the Pythagoreans inherited the doctrine concerning music from the Orphics and the doctrine of reincarnation from the Dionysians, both of which, together with the Pythagorean procession of numerical series was taken over and made use of by Plato.

From harmony, from heavenly harmony,
This universal frame began;
From harmony to harmony
Through all the compass of the notes it ran,
The diapason closing full in man.⁽¹⁰⁾

It is not at once obvious to the modern mind that there is any connection between music, the doctrine of immortality of the soul, and mathematics. But the vision of philosophic genius is a unitary vision. Pythagoras found that the "perfect consonances" (as they still are called), the intervals of the fourth, the fifth and the octave, can be expressed exactly as ratios between the numbers 1, 2, 3, and 4, which, added together, make the "perfect" number "ten". The choice of "ten" as the "perfect" number is explained by the symbol "tetractys" and is not, as is sometimes suggested, a purely biological accident of our having ten fingers on our hand. The original "tetractys" appears to have been obtained by the addition in the Greek method of $1 + 2 + 3 + 4 = 10$:

"Ten" is therefore called triangular number.

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The sum of any number of the series of odd numbers beginning with 1 (one) is similarly seen to be square: etc., and the sum of any number of the series of even numbers beginning with 2 (two) makes an oblong number: , etc.⁽¹¹⁾

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But the "perfectness" of the consonances, although they were arrived at by

(10) Quoted in E. M. W. Tillyard, The Elizabethan World Picture, London: Chatto & Windus, 1958, (1943), p. 94.

(11) Burnet, John, op. cit.

measuring the length of the strings of the lyre are based on the proportions of frequencies of the sounds. The result is the same: the lengths of strings and numbers of frequencies are inversely proportional, (supported by empirical investigation of the overtone series). The ratio of the octave is 2:1; the ratio of the fifth is 3:2; the ratio of the fourth is 4:3. In this discovery Pythagoras divined a principle illuminating the order of Nature. For if the chaotic welter of sounds that besiege our hearing can be reduced by the principle of measure to the harmonious order of art and finally to proportions of number, might not the whole order of Nature, with its acknowledged beauty, be framed into a doctrine that the reality of things lies in the limiting principle of measure, proportion and number? In astronomy the speeds and distance of the heavenly bodies are ruled by the proportions of harmony: the sun, the moon, and the five planets then known formed a scale or octave, the intervals of which were numerically determined by the distances between their orbits. That octave, as we learn from the Timaeus, has its counterpart in the immortal soul of man; the mighty revolutions of the soul of the world which are the planetary orbits are reproduced in a smaller scale in the soul of man. The forms of surfaces which limit tangible bodies represent the perfect figures of geometry, and the laws of these figures can be reduced to relations of number. Owing to the Greek mode of representing numbers by patterns of dots, as we have already noticed, the relation between notions of number and of geometrical configuration are more obvious than by the modern method. Pythagoras is said to have been the first man to call the universe "cosmos", which meant beauty as well

as order. Plato believed that, were it not for the perishable nature of the body, man's soul would make music in perfect accord with the music of the Cosmos. The body thus forms a barrier between the soul of man and the soul of the world, and the function of music is to overcome it. Music can achieve this because, on the one hand, it can reach the soul through the bodily senses of hearing, while, on the other hand, it is itself attuned to the celestial diapason.

It might be that the significance of art in Pythagoreanism could be explained by the tradition that Pythagoras was said to have been the son of the god Apollo,⁽¹²⁾ and if it does not explain, at least it suggests that the traditions concerning this native son of Samos are, as Bertrand Russell tells us, "an almost inextricable mixture of truth and falsehood".⁽¹³⁾ He is pictured as both a philosopher and a founder of mathematics, but also as a religious prophet and mystic. "All the systems that he inspired", Cornford says, "tend to be otherworldly, putting all value in the unseen unity of God, and condemning the visible world as false and illusive, a turbid medium in which the rays of heavenly light are broken and obscured in mist and darkness".

The Pythagorean doctrine, that number lies at the base of the real world, is the chief source of the belief in eternal and absolute

(12) According to legend he was born in a virgin birth. His mother is called Parthenis; quoted by F. M. Cornford, in From Religion to Philosophy, N.Y.: Harper's Torchbook, 1957, p. 205.

(13) B. Russell, History of Western Philosophy, London: Allen & Unwin, 1955 (1946); p. 49.

truth as well as in a super-sensible intelligible world. To show how this belief is arrived at, we can do no better than repeat Bertrand Russell's words:

Geometry deals with exact circles, but no sensible object is exactly circular; however carefully we may use our compass, there will be some imperfections and irregularities. This suggests the view that all exact reasoning applies to ideal as opposed to sensible objects; it is natural to go further, and to argue that thought is nobler than sense, and that objects of thought more real than those of sense perception. Mystical doctrines as to the relation of time to eternity are also reinforced by pure mathematics, for mathematical objects, such as numbers, if real at all, are eternal and not in time. Such eternal objects can be conceived as God's thoughts. Hence Plato's doctrine that God is a geometer, and Sir James Jean's belief that He is addicted to arithmetic.(14)

This account of the Pythagorean tradition will serve a dual purpose; a reminder of the age-old "formalist" approach in Western art from the Greeks through the Middle Ages to modern man, and a reminder also that an idea is rooted in life, for abstractions without empirical manifestations are found only in mythology, although we sometimes like to think they exist as entities. The emphasis is on structure in the various forms of human activities and suggests that the nature of these various activities can be approached through the study of the discourse in question, whether it be poetry, painting, music, physics, or chemistry. Pythagoras counsels us to express quality in terms of numerically determined quantity, i.e., to measure. In music this means constructing in time and pitch, in painting - in line and colour, and in sculpture

(14) Bertrand Russell, op. cit., p. 55.

and architecture - in surface and edge, but all these can be shown to be manifestations of spatio-temporal properties. Perhaps it is due to Pythagoras that we have come to regard such exhibitions of linear rhythm as those exemplified in the Gothic cathedrals as "frozen music." The spatio-temporal element in the visual arts has until recently escaped satisfactory analysis, although it has always been recognized in one form or another: as pulse and rhythm known to evoke emotional response; as symbolic pattern (such as is treated by the "Sacred Geometry"); or as design principle. In contemporary painting and sculpture, however, since the cubists, expressionists and futurists, space-time has remained foremost in consideration and the outstanding problem. Could it be that, like the scientists since Einstein who construe physical facts such as gravitation as exhibitions of local peculiarities of spatio-temporal properties, the artists and musicians of today are also following the pure Pythagorean tradition? Many signs show that it might be so.

To recapitulate, we have seen that in art each successive age depends for inspiration, materials and methods on the antecedent ages and periods, yet, if their art is to be their own and were to describe the facts of the world as they know it, a rational process must be involved. The organization of data of experience in developing vocabulary by constant modification and revision is a good example. New classes are added, based upon new elements of experience, or upon the recognition of distinctions in what was previously undifferentiated, and if they become

of sufficient interest to a sufficient number, are maintained; old classes, having outlived their interest, become obsolescent and finally disappear. It is clear therefore that, analogically, there never can be entire correspondence, as regards ideational content, between the art of any two people, or between any two periods in the art of one people. On the other hand, there can never be complete difference. Since our capacity to abstract and generalize depends upon our capacity to detect resemblances in the midst of differences of the data of experience, in the measure that the resemblances become less numerous, less frequent, less obvious, and more obscured by the increasing variety and complexity of difference, the task of abstraction becomes more difficult, and the resulting concept is a mental product of a higher order. It is possible therefore, at least in theory, to classify art works from the point of view of conceptual gradation, that is, as mental products of lower or higher order, according as an analysis of their meanings (if they can be properly deciphered) reveals a lower or higher level of abstraction. We classified art, therefore, as "tautological", "scientific", "psychological", "iconological" or "imitative", depending on a higher or lower level of abstraction exercised. We may say: what a work of art represents is its sense, and its sense is its ordinal experience.

Chapter III.

Abstraction in Contemporary Music.

The fact that contemporary art is often identified with abstract art may lead one to assume that of all art of periods, the modern, i.e., the contemporary, period, is uniquely privileged to use abstraction. In this and the following chapters we shall discuss the contemporary art, the art from around 1900, in order to determine what it claims to achieve and by what procedure it does so. However, since in talking about art in general, there is some danger of losing contact with what painters, sculptors, composers, etc., do, the present chapter will be concentrated on one branch of contemporary art only - namely music.

There are several reasons for this particular choice. First, of all the branches of art, music is said to be the most abstract, and due to its abstractness, "abstractly minded" visual artists are said to have a particular interest in the musical method. Second, it so happens that there is one method of musical composition which seems very suitable for representation in numerical and logical forms, thus permitting us to compare it with the activities of the visual artists who use logical representation as part of their method.

Schönberg's twelve-tone music has been blamed for being "too intellectual" and "sterile", for its "emotionalism", or again for its absence of beauty". While concentrating the discussion on the twelve-tone music in

this chapter, we hope to prepare the ground, so to speak, for discussion of contemporary painting in the next chapter.

Schönberg pointed out that the tonal harmony, which he abandoned for the new method of composition, had served "not only as a source of beauty, but, more important, as a means of distinguishing the form".⁽¹⁾ It was necessary, then, to find a substitute for what Schönberg called the "structural functions of tonal harmony".

It is important to mention here that Schönberg was fully familiar with the Wagnerian tradition before he entered an experimental period of composition in which he went back to Beethoven, Bach and the earlier polyphonic writers for inspiration. As a result he abandoned the lengthy Wagnerian style and began to compose extremely short, laconic musical statements in what he termed "twelve-tone" procedure, or the "Method of Composing with Twelve Tones which are Related only with one another".⁽²⁾ At that time, around 1910, he was constantly in touch with Kokoschka, Kandinsky and Barlach⁽³⁾, and it is clear from Schönberg's writings that the ideology of "Der Blaue Reiter" group manifested itself in his music.

(1) Arnold Schönberg, Style and Idea, N.Y.: Philosophical Library, 1950, Chapter, "Composition with Twelve Tones", p. 105.

(2) ibid., p. 107.

(3) Schönberg himself was a painter of considerable ability and belonged to the Blaue Reiter group; in 1912 he published an article, "The Relationship to the Text" in Der Blaue Reiter, a symposium edited by Kandinsky and Franz Marc, Munich, 1912; 2nd edition, 1916. Will Grohmann in Wassily Kandinsky, N.U.: Abrams, 1948, tells of the friendship between Schönberg and Kandinsky and includes a photograph of both artists with their wives sunbathing together at Munich.

When Schönberg decided to break with the tradition that nurtured him, he did not feel that he was creating a revolution, but that his invention was the next logical step in evolution of music. We must not forget that the method of composing with twelve tones grew out of the development of chromaticism. Here is what Schönberg has to say about the "necessity" to develop this method:

In the last hundred years, the concept of harmony has changed tremendously through the development of chromaticism. The idea that one basic tone, the root, dominated the construction of chords and regulated their succession - the concept of TONALITY - had to develop first into the concept of EXTENDED TONALITY. Very soon it became doubtful whether such a root still remained the centre to which every harmony and harmonic succession must be referred. Furthermore, it became doubtful whether a tonic appearing at the beginning, at the end, or at any other point, really had a constructive meaning Moods and pictures, though extra-musical, thus became constructive elements, incorporated in the musical functions; they produced a sort of emotional comprehensibility. In this way, tonality was already dethroned in practice, if not in theory. This alone would perhaps not have caused a radical change in compositional technique. However, such a change became necessary when there occurred simultaneously a development which ended in what I call the EMANCIPATION OF THE DISSONANCE. The ear had gradually become acquainted with a great number of dissonances, and so had lost the fear of their 'sense-interrupting' effect. One no longer expected preparations of Wagner's dissonances or resolutions of Strauss' discords; one was not disturbed by Debussy's non-functional harmonies, or by the harsh counterpoint of later composers ...⁽⁴⁾

Thus it was the "necessity" to supersede the "structural functions of tonal harmony" with the structural functions of the chromatic scale which led to the substitution of the relationship of all tones

(4) Arnold Schönberg, op. cit., pp. 103-104. The italics are Schönberg's.

and chords to a central key-note in tonal harmony with a "note-row" (Tonreihe), or the succession of tones from the twelve notes of the chromatic scale. The twelve tones could be arranged in any order that the composer thought suitable, but with the rule that every note from the "note-row" which forms the basis for the composition must be sounded before any of them is employed for the second time. This eliminated a common centre on which the tonal scale depended and created a new relationship between the notes. Instead of being related to a common centre, the notes now were related "only to each other". But the note-row was in no way identical with the chromatic scale. The row originally chosen as a basis of a work could be employed in various forms: it could be played backwards, it could be turned upside down, and the upside-down version could also be played backwards. This procedure thus had supplied the composer with four note-rows, the original and its three variations, for which the terms commonly used are: prime, known also as the "basic set", retrograde, inversion, and retrograde inversion. Moreover, any of these four rows may be transposed to begin on any of the remaining eleven notes of the scale; and the "basic set" could not only be played forward, backward, right side up, or upside down, but also linearly (horizontally, as a melody), or vertically (as chords), or mixed, linearly and vertically. But the rule that no note should appear out of sequence was strictly obeyed. The basic set of the composition was thus determining the composition completely and every note of the whole composition showed its relationship to this fixed fundamental series.

This thoroughly rational organization in Schönberg's method led to severe criticism. Compositions such as Schönberg's were said to be at best "splendid intellectual constructions", at worst they were described as "paper music" capable of being composed by a machine. It is indeed agreed that electrical computers, these manufactured brains which do the work of calculating payrolls, keeping track of plane reservations, guiding of missiles, playing games and translating from one language into another, can also be used to compose music. But it is also agreed that these machines are still a long way from supplying the note-rows for such compositions, or that they would consistently "write" what can be properly called a musical composition in that this composition would be a musically coherent whole. Yet, this objection can be overruled by saying that it is logically possible that a machine could supply its own note-rows, or impose form on the music it writes. After all, the statement that a machine has not been "taught" how to give form to its music should not be taken to imply that composers always deliberately impose form (5) on their work. For example, when composers describe the writing of a work, they say such things as, "the

(5) I am using the word "form" here in its etymological sense referring it, as some philologists do, to the Sanskrit root dharman neut., holding, position, order; others compare it with Latin ferire, to strike.

shape of it was taken out of my hands, so to speak, as I worked".⁽⁶⁾

We understand the phrase as implying that the original plan of the composer had to be modified during the operation, not due to the intervention of some mysterious entity, but because the composer changed his mind about his original plan, and that the words "... taken out of my hands ..." is just a loose way of speaking.

The basic principle of a machine-composer capable of composing the twelve-tone music, it seems, would be the "feedback principle". When a mechanism can detect the results of its own actions, and is guided by the results, engineers say it has a "feedback". But the "feedback" can operate only if the machine is capable of evaluating its past actions by using fixed rules that are part of its instructions, store the results in a "memory unit", and deliver on demand the one that is "best" according to its built-in standards of judgment.

Had the use of the note-rows been enough to give a work the unity which it would have, we could have been satisfied that the writing

- (6) Delius, quoted by Eric Fenby in Delius as I knew him, London, 1936, p. 36; in this quotation the word "shape" is used for "form"; this usage goes back to the Scholastic philosophic term "form" which was the essential determinate principle of a thing. "Form" was primarily applied to objects of sense (the visible aspect of a thing) but was in philosophical use extended to "objects of thought": every "thing" or entity was viewed as consisting of two elements, its form by virtue of which it was different from, and its matter which it had in common with others. In ordinary speech, stuff, a portion of matter, becomes a "thing" by virtue of having a particular "form". By altering the form, the matter remaining unchanged, we make a new "thing".

of music by means of an appropriately constructed machine would be comparable to the practice of composers; but, strictly speaking, a note-row no more defines the whole of the twelve-note system than the playing of a major scale defines the whole of the harmonic and contrapuntal system of Beethoven.⁽⁷⁾ The difference, then, between the composer's way of writing twelve-tone music and of a machine doing it lies in the purpose of the composer, not in the external form of the composition. The composer will not only choose according to the rule, his purpose will be to form a musically meaningful sentence in order to assert something about the world, be it at any one of the five levels mentioned in the previous chapter.

The machine constructed to the writing of twelve-tone music will "know" the rules similarly to the way a grader's apprentice knows the rules of grading. The greater his intelligence and the longer his apprenticeship, the more nearly infallible he becomes. In this sense machine-composing is a business done in accordance with principles which the machine can be "taught" to do similarly to the way an apprentice can

- (7) In the foregoing discussion of the use of a machine for the purpose of composing the twelve-tone music I have drawn heavily from G. H. R. Parkinson, "The Cybernetic Approach to Aesthetics" in "The Journal of Philosophy", vol. 36, No. 136, Jan. 1961, pp. 49-61, and from Irving Adler, Thinking Machines, N.Y.: Signet Science Library, 1962. Both writers show how electronic computers can be set up to work out twelve-tone music by means of numbers.

X be taught; but if the apprentice were to speak, he would say to his master: "from your teaching I gain a deeper understanding of what is involved in this art, but no greater power to produce it myself", whereas the machine would gain no understanding at all. The apprentice would learn to compose either in the sense in which a parrot can learn to speak English, and thus might realize no more than a parrot of what he is doing; or he might distinguish what is involved in his master's art similarly to the person who echoes conventional moral judgments correctly without really making moral judgments himself.⁽⁸⁾ Forming of musically meaningful sentences, then, is quite similar to making of moral judgments and not just echoing them.

The "thinking" involved in the "thinking machines" proceeds according to fixed rules along a predictable course. Behind this "routine thinking" lies the creative thinking by which the rules these machines follow are fixed. The creative thinking is used in art as in science, but for different purposes. Science ministers to man's need to be able to determine correctly his expectations, and hence his activity in terms of the evidence which he has accumulated, therefore prediction is of utmost importance in science. Art, on the other hand, is not concerned with accurate prediction, but attempts to picture what human beings value. Since in art the aim is not prediction, it might

(8) I owe the simile to J. O. Urmson, "On Grading" in A. G. N. Flew, ed. Essays on Logic and Language, 2nd series, Oxford: Basil Blackwell, 1955, pp. 160 to 187.

be expected that requirements of consistency are non-existent. But this is not the case at all; requirements of consistency take on a special form: the artist constantly experiments with syntactical combinations of his language elements to obtain the desired value effects. As we saw from our discussion of the charges against the twelve-tone music claiming that it is nothing but "paper music, capable of being composed by a machine", these charges could be brought to bear if and only if it could be shown that a machine can make value judgments and not just echo them. So far as we know, this has not been possible.

Schönberg says:

It has been mentioned that for every new composition a special set of twelve tones has to be invented. Sometimes a set will not fit every condition an experienced composer can foresee, especially in those ideal cases where the set appears at once in the form, character, and phrasing of a theme. Rectifications in the order of tones may then become necessary, (9)

which not only confirms what we have been saying about the machine and the apprentice in contradistinction to the master, but also introduces the notion of "theme" in a different sense from the "note-row" or "basic set". Thus actually we are dealing with two concepts which Schönberg himself formulated as "Grundgestalt" (basic structure, form, or shape) and "Grundreihe" (basic set, tone-row, or note-row). The "Grundgestalt" is, in his words, the "first creative thought" and includes the basic

(9) op. cit., p. 114.

set.(10) Where does this leave the twelve-tone composer? Schönberg quotes Schopenhauer as supplying the answer:

The composer reveals the inmost essence of the world and utters the most profound wisdom in a language which his reason does not understand, just as a magnetic somnabulist gives disclosures about things which he has no idea of when awake.(11)

Identifying himself with a somnabulist he, who "made order ... to resolve the magic essence of music into human reason", now appears to "dissolve human reason in magic".(12) Schönberg's belief in the subconscious and other mystical entities, of which there is plenty of evidence in his writings, however, had little effect on his music. In the case of the creative idea, the "Grundgestalt", it is of no importance whether it has "taken place" in the conscious or subconscious; if the conscious is equated with intellect and the subconscious with feeling, then it is equally true of both that they are capable of sensing and recognizing connections or relations, even if these connections or relations are not obvious. This idea is so clearly expressed by Schönberg that it is worth repeating in full:

After I had completed the work (Kammersymphonie) I worried very much about the apparent absence of any re-

- (10) See "Translator's Preface", Joseph Rufer, Composition with Twelve Notes, related only to one another. London: Rockliff, 1954, Translated from the German Edition Die Komposition mit Zwölf Tönen (1952), by Humphrey Searle.
- (11) Quoted in "The Relationship to the Text" in Der Blaue Reiter, 1912, Style & Idea.
- (12) Thomas Mann, Doctor Faustus, N.Y.: Alfred A. Knopf, 1948, pp. 193-194.

relationship between the two themes. Directed only by my sense of form and the stream of ideas, I had not asked such questions while composing; but, as usual with me, doubts arose as soon as I had finished. They went so far that I had already raised the sword for the kill, taken the red pencil of the censor to cross out the theme 'b'. Fortunately, I stood by my inspiration and ignored these mental tortures. About twenty years later I saw the true relationship. It is of such complicated nature that I doubt whether any composer would have cared deliberately to construct a theme in this way; but our subconscious does it involuntarily.(13)

The creative idea having come to the composer in his "somnambulist" state "in a language which his reason does not understand" is, after all, capable of reduction to the expressible in a language which reason does understand. "Reason and magic ... may meet and become one in that which one calls wisdom, initiation; in belief in the stars, in numbers ..."(14) The idea and technique, then, despite what was said earlier, is one, i.e., what the composition represents is its sense. Whether the "creative idea" deals with feelings or with thoughts, its expression must have an inner logic (consistency). For Schönberg, the expression of feelings and/or thoughts means a logical expression: laws which regulate our intellect as well as our feelings, function logically, or as it is expressed in the Tractatus, "It used to be said that God could create everything, except what was contrary to the laws of logic. The truth is, we could not SAY of an 'unlogical' world how it would look."(15)

(13) op. cit., p. 113.

(14) Thomas Mann, op. cit., p. 194.

(15) L. Wittgenstein, Tractatus, 3.031.

Theoretically, a well balanced musical composition will convey ideas imbued with feeling, or, to put it the other way, it will express feelings controlled by intellect:

It is not the heart alone which creates all that is beautiful, emotional, pathetic, affectionate and charming; nor is it the brain alone which is able to produce the well-constructed, the soundly organized, the logical, and the complicated. First, everything of supreme value in art must show heart as well as brain. Secondly, the real creative genius has no difficulty in controlling his feelings mentally; nor must the brain produce only the dry and unappealing while concentrating on correctness and logic. But one might become suspicious of the sincerity of works which incessantly exhibit their heart, which demand our pity, which invite us to dream with them of vague and undefined beauty and of unfounded, baseless emotions, which exaggerate because of the absence of reliable yardsticks; whose simplicity is want, meagreness and dryness, whose sweetness is artificial and whose appeal attains only to the surface of the superficial. Such works only demonstrate the complete absence of brain and show that this sentimentality has its origin in a very poor heart.(16)

Words such as these, although they do not express anything new, coming from a man whose work is considered of the most abstract kind, demonstrate once more his concern for the "whole" man. Apparently, Schönberg no less than Barlach (the sculptor) says, "I must be able to join in the suffering". But however sincere his wish was to communicate, he never made concessions to the ordinary listener, to the uninitiated, to the "average man in the street":

(16) A. Schönberg, "Heart & Brain in Music", in Idea and Style, p. 179.

No one should give in to limitations other than those which are due to the limits of his talent ... No musician ... would degenerate in order to comply with the slogan such as 'Art for All'. Because if it is art, it is not for all, and if it is for all, it is not art ... But there are a few composers, like Offenbach, Johann Strauss and Gerschwin, whose feelings actually coincide with those of the 'average man in the street'. To them it is no masquerade to express popular feelings in popular terms, They are natural when they talk thus and about that.(17)

Schönberg's music, then, according to our terms defined in chapter II, is never "imitative", seldom, if ever, "iconological", perhaps "psychological", but, since he explores the elements of music within the strictures of carefully defined rules in order to make people "understand what music has to say purely through their musical faculties"(18), he can be classified rather as being "scientific" and "tautological". Thus his music reveals itself most effectively to those endowed with "musical faculties", for whom a piece of music is not unintelligible or worthless if it does not evoke images of some kind. If there are a number of what we could call "extra-musical" ideas perceptible in a piece of music, they should be so connected as not to offend musical logic. This we saw also in Beethoven's Sixth Symphony ("The Pastoral"), where in the movement, "Awakening of serene impressions upon arriving in the country: Allegro ma non troppo", Beethoven uses the minimal number of minor chords, standing for sadness; he goes even as far as to leave sections of the melody unharmo-

(17) A. Schönberg, *Idea and Style*, pp. 50-51.

(18) ibid. p.51.

nized in order to avoid the use of minor chords where it was impossible not to use them in respect to the laws of harmony.

Before we move on to talk about abstraction in contemporary visual art and especially in painting, it is necessary to pause here in order to clarify the main points of the present discussion.

We set out to analyze one branch of contemporary art and chose the twelve-tone music, not because it is the chief representative of modern music, but because it is said to be the most "abstract". We saw that Schönberg, the inventor of the twelve-tone method, used it to reduce to the musically recognizable ideas and expressed feelings by means of more restricted musical equipment than the tonal harmony. It was pointed out that some features of this method of musical composition were similar to the methods used by Bach and Beethoven, and later in this chapter I showed that the dissimilarity between the antecedent methods of musical compositions to Schönberg's lies in the relations between tones. It will be necessary to re-emphasize this point in a slightly different version because of its utmost importance in the argument.

Schönberg and his followers, Webern, Berg, Rankl, Zillig, Eisler, Skalkottas, Hannenheim, Strang, Gerhart and Weiss, refused to call the twelve-tone method "a system" of music, because they were still using the same musical elements for the same purpose of expressing facts about the world (which includes music); but they expressed these facts

with a particular "method of projection" which differed from the tonal harmony in that the tonality as the logical centre relates every note in the scale to this centre, the tonic (the first note of the scale); in the twelve-tone method there is no common centre, the association of tones is regulated by the order of these tones and their inter-relationships. That changes the concept of music insofar as it destroys the impression or appearance of an absolute "up" or "down", "right" or "left", "forward" or "backward". Every movement of the tones has to be seen as a relationship of sounds appearing as space-time units. Let us call this the "relativity principle" in modern music. (19)

- (19) Paul Hindemith also speaks of music as having the dimensions of space and time (Elementary Training for Musicians, N.Y.: Associated Music Publishers, 1946) where the most primitive spatial action is the use of tones of different length, and the most primitive spatial action is expressed in singing or playing tones of different pitch. Some musicians seem to be saying that one of these elements is more important than the other; but since sound in music must begin and end in time, the dispute does not make sense. In fact the time and space elements being mutually inclusive present themselves as one, i.e., space-time unit. Thus compositions with twelve tones bring the tone-row to life in rhythm, just as the compositions in the tonal method bring a particular scale to life in rhythm.

Chapter IV.

Abstraction in the Visual Arts.

Generally, music has always been thought of as an abstract art and the visual arts as representational. However, it has been shown that at least in some music the composer's intention has been to depict reality, to represent the world, hence the composition is a model of reality; thus it is not incorrect to say that music is, in a sense, representational. Speaking about painting, for example, in order to illustrate the fact that all good painting is abstract, we may show that some paintings of some seriously-minded artists (1) are models of reality, so that the elements of the painting are combined with one another in a definite way, representing that the things are so combined with one another(2); thus the painting consists in the fact that a set of objects stand in a certain relation to each other(3). But we already saw that in a picture of red flowers and green leaves it is not absolutely necessary to have the elements "red" and "green"; there must be only a structural similarity between the picture and what it stands for. It was in this sense that we defined abstraction in art as the "recognition of a relational structure apart from the specific thing in which it is exemplified."

(1) Not all artists are seriously-minded and not always the artists' intention is to depict reality.

(2) L. Wittgenstein, Tractatus, 2.15.

(3) Tractatus, 5.4733.

The idea that a picture depicts reality, if depiction of reality has been the artist's aim, then suggests that abstraction has a truth-function; for, as we have seen, there are two distinct features belonging to a painting (sculpture, etc.): first, the relation between the elements of the painting, and second, the correlation of the elements in the painting with things outside it. The first feature, in a sense, must belong to a painting before the second feature can, because only if significant relations hold among the elements of the painting, can they be correlated with objects outside so as to stand for them. The following theory of how the truth-function of abstraction works we shall call the theory of truth-function of abstraction.

The general line of thought in this theory, roughly sketched, is as follows: it is assumed that the artist attempts to depict the world. But in each and every case of depicting the world special kinds of states of affairs exist; thus the world is an interpreted fact, i.e., facts are formed out of states of affairs, and thoughts, which in the case of artists take the form of pictures (or "musical" pictures in the case of composers), express facts. This is where the process of abstraction comes in. All pictures are logical because they are formed by the existence of special kinds of states of affairs and these are expressed by certain rules or axioms. Pictures that are the result of what can rightly be called thoughts are meaningful pictures. Meaningful pictures can not only express facts based on existing states of affairs, but also express facts based on a logical possibility of things being thus or thus.

The logical possibility of things being thus or thus consists in our ability to picture (imagine) their being thus or thus. The pictures as an interpreted fact can represent the prototype truly or falsely. Since the elements of the picture are combined in a definite way, its truth-value will be determined upon an examination of the logic of its internal structure together with an examination of the "key" of representation or execution, which will tell how the elements of the picture are correlated with objects outside so as to stand for them.

The possibility or impossibility of correlating the elements with the objects for which they stand seems to depend on whether the way in which the painter has arranged the elements contains the possibility of expressing the relation according to his intention. But one could make a nonsensical picture have a perfectly good sense just by changing the kind of reference that some part of the picture had when it was deemed "nonsensical". Thus it is we who give the elements of the picture their reference. Accordingly, if the painting does not make sense, this is only because we have given no meaning to some of its constituent parts. This also explains, if it can be called an explanation at all, the fascination which the modern abstract art holds for some of us; because of its wide signification we have a greater freedom to correlate the elements in the picture to the objects outside.

Assume that an artist could give a complete description of the "real" meaning of his picture, a description that includes all that is

or will be the case. What additional interest could there be for us to know what might be, has been, or will come to be as a logical possibility? But due to the wide signification of the elements of his picture the artist cannot give such a description; and so far as the interpreter (a critic) can do so, his description is always the product of induction, founded on what is believed to be the case in his limited part of space and time. Induction occurs, as we have seen, within the presupposed framework. Within this framework we describe such facts as we believe to know and within which we also make predictions as to facts not yet known. Thus the picture as a whole can be analyzed into facts in different ways, and each way will be a logically possible interpretation of the picture, just as the picture can be one of the logically possible interpretations or depictions of some thing pictorially.

Let us now approach the "theory of truth-function of abstraction" from the historical point of view. Earlier in this thesis⁽⁴⁾ we expressed the possibility that the contemporary artist might be following what was described as the Pythagorean tradition, that the reality of things lies in the limiting principle of measure, proportion and number⁽⁵⁾. Probably

(4) *Supra*, Chpt. II, pp. 15-18.

(5) Lest it be misunderstood, I do not wish to give the impression that I think the naive metaphor of the Pythagorean cosmology is taken literally by the contemporary artists, nor do I maintain that the system of Pythagoras, as excogitated by him, was anything like the modern conception of what he meant when he reportedly said, "Number is the guide and master of human thought; without its power everything would remain obscure and confused." See Philolaos, *Fragments* 4 and 11, in Diels, *Die Fragmente der Vorsokratiker*, I, pp. 408, 411.

in the minds of the Pythagorean thinkers there was no sharp distinction between symbol and object. Things were not only related to or expressed by numbers, they were numbers. Aristotle⁽⁶⁾ says that the Pythagoreans supposed that the motion of the stars must produce sounds because those huge bodies move with such a great speed. As we described earlier, from the observation that their speeds and the distances are in the same ratios as the concords of the musical scale, they argued that the sounds generated by the heavenly bodies not only are expressed by, but are a "harmonia" or scale. Speaking about the visual phenomena, the extended bodies occupying space have surfaces whose shapes and colours can be measured. From these measurements theorems of geometry were derived which not only could be expressed in numbers but were numbers. In number, and in number alone, they found the intelligible world.

We have seen that it was possible to deduce from the Pythagorean creed, "The nature of things is Number", that the base of the real world is a super-sensible intelligible world in which order and beauty is one.

In the view of Plato, beauty was a form apprehended by the intellect which when separated, as it were, from the senses, the intellect finally was able to grasp the pure ideas as they existed in the realm of forms. In the view of some Church Fathers we have beauty as revealed

(6) cf. Aristotle, Metaphysics, I, 5, 985 b.

by way of faith which led in art to symbolic representation of the Universe with God as its Architect and Geometer. In the view of some rationalists we have beauty as the result of logical intuition: they believe we intuit self-evident principles from which further truths can be deduced. The Romantics and some of our modern existentialists define beauty in terms of will and feeling by way of mystical intuition; they tell us that the world perceived by the senses is doubtlessly real, but they also insist that there is "something else", and the certainty of this "something else" is that of a thing experienced. They assure us that they have "seen", they have "touched" and they "know". But, to use J. L. Austin's phrase, let us not ransack every available cupboard to grace our feast. We need not examine all the possible meanings of beauty meaning "order" to get at the base of "the real" world in the hope that that would enable us to work out truth-tables for beauty.

If we accept the generic meaning of "truth" as "the end of enquiry", where any end that is designated is the specific meaning of truth⁽⁷⁾, we see that any of the criteria, enumerated by us as a partial list of the specific meanings of the reality of the world, have served artists, critics and connoisseurs for the purpose of working out of truth-tables in order to judge one work of art "right" and the other "wrong", one painting "true" and the other "not true". Plato's end of enquiry is reached when the eternal forms are grasped in their purity; hence the artist who accepts Plato's criterion for truth, as Zeuxis did, will direct his enquiry

(7) Barnett Savery, "The Emotive Theory of Truth", in Mind, vol. 64, No. 256, 1955, pp. 513-521.

to, and combine the elements of his art so as to grasp the eternal forms in their purity. Similarly, those who accept faith as a criterion of truth, at once will have accepted a norm, a specific form of representation which their art will show forth in their form of representation. We can deal similarly with the Romantics and the Existentialists. The method of projection is the thinking of the sense of the proposition.(8) We shall return to the question of reality and truth in art in the concluding chapter; presently it is our point that there is no one and only one proper criterion for the truth-function of abstraction in art, but that in each individual case a specific criterion has been used if and when the artist's aim has been to depict reality.

As a result of these reflections it becomes clear that the artist's projected intention, the work as conceived by the artist and indicated by the arrangement of his language elements, then, "internally" remains independent of change in the state of affairs in the world. Therefore it is at least theoretically possible to reconstruct the artist's conception, provided we know the particular method by which the objects (ideas, feelings, events) are projected into the work of art. However, since the elements out of which the work of art is constructed have a wide signification, a subjective interpretation of the work of art is always possible and often inescapable. The fact that we do interpret works of art subjectively itself suggests that we take the

(8) Wittgenstein, Tractatus, 3.11.

arrangement of the internal elements in a work of art to stand for the states of affairs in the world.

But since the "internal" structure of the elements stands for states of affairs in the world,⁽⁹⁾ we may ask whether an imaginary picture can ever be a "true" picture. An imaginary picture would be an interpreted fact of an imagined world. It is clear that however different from the real one an imagined world may be, it must have something - a form - in common with the real world. This fixed form consists of the objects, and objects contain the possibility of all states of affairs; objects from the substance of the world.⁽¹⁰⁾ And substance, we are told, is what exists independently of what is the case; it is form and content.⁽¹¹⁾ Thus it follows that, if a picture is an interpreted fact of an imagined world and this imagined world has a form common with the real world consisting of objects, the truth or falsity (truth-value) of an imaginary picture will be determined upon an examination of the logic of its internal structure together with an examination of its "key" of representation or execution. What is said of a non-imaginary picture depicting the real world, must also be said

(9) "State of affairs" stand for the German *der Sachverhalt*, and is used here to denote something that could be the case; whereas *die Tatsache* means *fait accompli*, a fact. Cassell's New German Dictionary, London: Cassell & Company, 1957.

(10) Tractatus, 2.022; 2.023; 2.014; 2.021.

(11) ibid., 2.024 and 2.025.

of an imaginary picture: "What the picture must have in common with reality in order to be able to represent it after its manner - rightly or falsely - is its form of representation", and further, "what every picture, of whatever form, must have in common with reality in order to be able to represent it at all - rightly or falsely, is the logical form, that is, the form of reality." "If the form of representation is the logical form, then the picture is called a logical picture. Every picture is also a logical picture. (On the other hand, for example, not every picture is spatial)".(12)

It is clear, then, that a picture may have several forms of representation, but one of these must be the logical form. This does not mean that a picture must have the same logical form as what it pictures, but that all pictures must have the logical form. From what was said can also be deducted that the supposition that the logical form of representation is common to one picture and reality, could afford no ground for supposing that it could not be represented in another picture.(13)

One more consideration of importance, which applies to every work of art, ancient or modern, but for our purposes very important here when an attempt will be made in the next part to discuss the modern abstractionist painters, is the consideration of the form of objects.

(12) Tractatus, 2.17; 2.18; 2.181; 2.182.

(13) F. P. Ramsay, "A Critical Notice of Tractatus" in Mind, Oct. 1923, pp. 465-478.

Objects, such as tables, chairs, books, are complex objects or things, but the world, as we have seen, is the totality of facts and not of things. Thus when we say that a picture represents that certain objects are combined or related in a certain way, we mean that the elements of the picture, and not things, are combined in that way. Since the objects (elements) of the picture are correlated with the "objects" ("outside") so as to stand for them, we may ask, what are the forms of these objects? - Wittgenstein gives us the answer, "Space, time and colour (colouredness) are forms of objects".⁽¹⁴⁾ These then are the forms which a "simple object" has. And any "complex object" is capable of reduction to these "simples".

These statements, among others in the Tractatus, e.g., that there are certain things which cannot be said but only shown, constitute the Mystical. The reason why certain things cannot be said, is that they have to do with the logical form which the picture has in common with reality. But the logical form of representation cannot be represented.⁽¹⁵⁾ What sort of things the things are which cannot be said but only shown is explained as follows:

We can speak in a certain sense of formal properties of objects and atomic facts, or of properties of the structure of facts, and in the same sense of formal relations and relations of structures. (Instead of property of the structure I also say 'internal property';

(14) Tractatus, 2.0251. (But ... "There are no 'logical objects'" - Ibid., 4.441 and 5.32; 5.4).

(15) cf. Tractatus, 4.121.

instead of relation of structures 'internal relation'. I introduce these expressions in order to show the reason for the confusion, very widespread among philosophers, between internal relations and proper (external) relations.) The holding of such internal properties and relations cannot, however, be asserted by propositions, but shows itself in the propositions, which present the atomic facts and treat of the objects in question.(16)

(16) ibid., 4.123.

Chapter V.

The Truth-Function of Abstraction.

In view of what was said about art, reality and the truth-function of abstraction, we hope it has become clear now that art can admit a unicorn despite of the fact that zoology cannot, and yet art is concerned with the real world as truly as zoology, though with its more abstract and general features. Presently we shall investigate the claims of some of the "non-objective" artists that their aim is not to depict reality but to create it.

First of all, it must be pointed out that what is generally understood as "abstract art" is divided, roughly speaking, into two kinds: (a) an art in which the world of objects is represented by means of schematized shapes called "abstractions", thus involving distortion of the objects represented; and (b) an art in which the element of representation is rejected and which is known as "non-figurative" or "non-objective" art. To the "abstract art" of the first kind belongs, according to the customary division, cubism, futurism, expressionism, dadaism, surrealism, etc.; to the "non-objective" kind, suprematism, constructivism, neoplasticism and abstract expressionism, etc.

It was already said that in art the world is pictured as a "fact" and not as a "thing", therefore there is no sense in speaking of "objective" art as of necessarily "imitative" in a narrow sense of the word, although we do not see any reason why it could not be, if that was the artist's aim. And, of course, the "non-objective" art could turn out to be as "imitative" of the objective world as any, if for reasons of his own the artist had had in mind to depict the objective world by the use of a very complicated method of projections.⁽¹⁾ The words "imitative" and "representational" refer to a level of intellectualization, a conceptual level in the hierarchy of abstraction. The branching out of art into various movements and schools is explained, on the one hand, by taking into consideration tradition and custom, i.e., the learned experience, but, on the other hand, also by accepting that, since tradition and learned experience do not actually explain how a new tradition may arise, the visual world such as colours, surfaces, shapes and edges are seen as meaningful "in themselves".⁽²⁾ In our view it is possible to regard colour as a symbol of some thing (event, feeling or idea) pictorially only if one and only one system of presentation of the world pictorially is presupposed.⁽³⁾ As we have already stated⁽⁴⁾, there is

- (1) Richard Strauss had said, perhaps jokingly, "I can express in music the moving of a pencil from one place to another". Arnold Schönberg warned the composers of the possibility that some day "psychologists and psychoanalysts will have deciphered the language of music. Woe, then, to the incautious who thought his innermost secrets carefully hidden ..."; See Style and Idea, p. 209.
- (2) Chapter II, "Percept and Concept in Art", supra.
- (3) Supra, Chapter IV.
- (4) Supra, Chapter II.

yet another explanation how people come to regard the world as different from what either their predecessors or contemporaries thought it was like, namely, by the exercising of their logical faculty in arranging the constituents of their world differently, and by a new configuration of the elements "creating" a new reality. In this process of re-arranging we do make use of antecedent conceptual achievements, but logic precedes every experience - that something is so; but that is no experience. Logic is before the How, not before the What.⁽⁵⁾ This is so not only in art but in all scientific and intellectual activities. For example, when Einstein developed his general theory of relativity, he went back to Riemann's geometry which had been created long before, but which Riemann regarded only as a mere logical possibility. Riemann's achievement was the hypothesis for Einstein to fit the description of facts. Similarly, Schönberg utilized the achievements of Wagner, Mahler and Debussy to develop the method of composition with twelve-tones.⁽⁶⁾ In this way Cézanne can be regarded as the progenitor of Georges Braque; likewise Monet's paintings are admittedly the "eye-openers" to Kandinsky⁽⁷⁾, who after having seen an exhibition of Monet's paintings in Moscow later wrote: "I had the impression that there painting itself came to the foreground; I wondered if it would not be possible to go further in this

(5) *Tractatus*, 5.552.

(6) *Supra*, Chapter III, p. 21. ff.

(7) Nina Kandinsky, "Some Notes on the Development of Kandinsky's Painting", in *Concerning the Spiritual in Art*, N.Y.: George Wittenborn, 1947, p. 10 (Original German ed., 1912).

direction. From then on I looked at the art of ikons with different eyes; it meant that I had 'got eyes' for the abstract in art." This was written by Kandinsky in his Notebooks in reference to Monet's paintings of haystacks⁽⁸⁾ in which the aim was to achieve, in Monet's own term, "instantaneity", a point in time expressed in colour-light relationships. Kandinsky's "Improvisations" and the later "geometrical explosions in space" also might be described as "instantaneities", pictorial descriptions of space-time. But in each and every case exemplified here there is a basic difference between the work of progeny and that of his progenitor (or progenitors) as there must also be the possibility to pinpoint the moment (or series of moments) when the new logical possibility of working out elemental relationships was conceived (one can learn as well from an unsuccessful example as from a successful one). We concede that very often attempts to express in words something that can only be shown result in failures of expression.

Phrases such as Kandinsky's favourite expression that in abstract art "the mystical is expressed by the mystical"⁽⁹⁾, and that "this art creates alongside with the real world a new world which has nothing to do externally with reality... It is subordinate internally to cosmic

(8) Exhibited at Durand-Ruel's in Paris in 1891. These 15 paintings were a great success. Unfortunately, I have not been able to find out during which periods of Kandinsky's residence in Moscow the Monet exhibition was held. It must have been during his student days at Moscow University c. 1894-96.

(9) Will Grohmann, Wassily Kandinsky, N.Y. Harry Abrams, 1958, p. 114.

laws"(10) are such failures of expression; when taken out of the context in which they were used, and analyzed from a biased point of view, these indeed can be taken as "pathetic bluff" devised to "create a smoke screen around abstract art"(11). The truth is that in most cases the artist deserves to be pitied for his verbal incompetency to present his case clearly and to be admired for his courage to try. It is a truly different task to equally well express in words what can successfully only be shown.

Kandinsky, Georges Braque and Piet Mondrian, to name a few of the highly original Twentieth Century artists who grappled with every new question connected with their art, have left us writings which are difficult to read and to analyze,(12) partly because of their peculiar literary style, partly due to their use of philosophical expressions

(10) In an article in *XX me Siècle*, 1935, quoted by Mme Nina Kandinsky, op. cit., p. 10.

(11) Wagner, Geoffrey, "Organized heresy: abstract art in the West", in Connoisseur, vol. 39, 1958.

(12) Kenneth Lindsay in an unpublished doctoral dissertation, An Examination of the Fundamental Theories of Wassily Kandinsky, University of Wisconsin, 1951, describes Kandinsky's style as follows:

"Characteristic of Kandinsky's writing is the technique of breaking up the given topic into opposites or alternatives. These opposites or alternatives usually follow directly after the posing of the problem and are numbered. Often they suggest further sets of opposites and alternatives. The sequence of thought is flexible, sometimes abrupt and cross-tacking, and frequently associative. The dominating relativity of the thought process contrasts strongly with the conclusions, which are often positively stated." Quoted from Peter Selz, "The Aesthetic Theories of Wassily Kandinsky and their Relationship to the origin of Non-objective Painting", in Art Bulletin, vol. 39, #2, 1957; pp. 127-136.

that often reflect only the surface of their basic ideas. One such basic idea is the creation of new realities. We have already stated our view of what this idea conveys⁽¹³⁾; let us now see whether it corresponds or can be reconciled with some of their statements.

The most lucid statement, to our knowledge, to the testimony that the modern abstractionist of the "non-objectivist" kind is bent on creating reality, not on depicting it, is by the "constructivist" Naum Gabo, who writes:

I maintain that knowledge is nothing else but a construction of ours and that what we discover with our knowledge is not something outside us or part of a constant and higher reality, in the absolute sense of the word; but that we discover exactly that which we put into the place where we make the discoveries ... We only know what we do, what we make, what we construct; and all that we make, all that we construct are realities. I call them 'images', not in Plato's sense ... but I hold that these images are the reality itself and that there is no reality beyond this reality except when in our creative process we change the images: then we have created new realities.⁽¹⁴⁾

There is no desire here to master objects in the "real" world, no wish to compare "constructivism" with scientific experimentation, or gain greater intellectual respectability for the "non-objective" art by likening it to pure science which also deals with abstractions, as, for example, we find in Franz Marc's diary entry, Christmas 1914:

(13) supra, Chapter IV, Part-1.

(14) Naum Gabo, "A Retrospective View of Constructive Art", in Three Lectures on Modern Art, N.Y.: Philosophical Library, 1949.

I am beginning more and more to see behind, or, to put it better, through things, to see behind them something which they conceal, for the most part cunningly, with their outward appearance by hoodwinking man with a façade which is quite different from what it actually covers. Of course, from the point of view of physics this is an old story ... Scientific interpretation has powerfully transformed the human mind; it has caused the greatest type-change we have so far lived to see. Art is indisputably pursuing the same course in its own way certainly; and the problem, our problem, is to discover the way.(15)

In fact, Gabo's view comes very close to that expressed in Wilde's paradox. Since this striking passage not only serves to illustrate what we would call the "egocentric" view of beauty but also shows that, what Gabo would like us to take for the distinguishing mark of the "non-objective" art from the "objective", the creating of realities (instead of depicting them) is seen as the privilege of both the "abstract" and the "concrete" art, we quote in full:

... Paradox though it may seem - and paradoxes are always dangerous things - it is none the less true that Life imitates Art far more than Art imitates Life ... A great artist invents a type and Life tries to copy it, to reproduce it in a popular form, like an enterprising publisher. Neither Holbein nor Vandyke found in England what they have given us. They brought their types with them, and Life with her keen imitative faculty set herself to supply the master with models ... -

- Where, if not for the impressionists, do we get those wonderful brown frogs that come creeping down our streets, blurring the gas-lamps and changing the houses into monstrous shadows? To whom, if not to them, do we owe the lovely silver mists that brood over our river, and turn to faint

(15) Franz Marc, quoted by Peter Thoene (pseud.), Modern German Art, Harmondsworth: Pelican Books, 1938.

forms of fading grace curved bridge and swaying barge?
The extraordinary change that has taken place in the
climate of London during the last ten years is entirely
due to this particular school of Art.(16)

Now, at the risk of flogging the converted, I should like to
dwell a little longer on the idea of creating realities in art.(17)

In what sense are a Greek centaur, Gothic or Renaissance Madonna, and
a Mondrian's Boogie-Woogie real?

Speaking about centaurs, what exists in art is not an animal
of flesh and blood, but a picture, a representation. To maintain that
a Madonna painted, e.g., by Raphael Sanzio, exists in her own world as
truly as Raphael existed in the "real" world is to say something delibe-
rately confusing. There is only one world, the "real" world: Raphael's
imagination is part of it, and the thoughts he had in painting the pic-
ture of the Madonna are real. So are the thoughts we have in looking at
the picture. The thoughts with which I approach Mondrian's "Broadway
Boogie-Woogie" (1942/43, New York, Museum of Modern Art) perhaps shows
me very clearly what boogiewoogie is, yet I cannot from the picture de-
rive rules how to dance it. Contrary to what can be deduced from the
statement of Gabo and what in his witty way Wilde wished us to believe,

(16) Oscar Wilde, "The Decay of Lying", in Intentions and the Soul of Man, London: Methuen, (1891), 1919.

(17) An illuminating and entertaining discussion of the use of words
"real" and "reality" can be found in J. L. Austin's Sense and Sensibilia, ed. G. J. Warnock, Oxford: Clarendon Press, 1962.
Especially Chapters VII - IX.

it is the very essence of art that, apart from the material substance of a picture, only the thoughts and feelings of the artist and his audience are real, and that there is not, in addition to them, an objective reality. When you have taken account of all the thoughts and feelings roused by Raphael Sanzio in writers and readers of history, you have not touched the actual man; but in the case of any one of Raphael's pictures you would have come to the end of it. If no one had thought about Raphael's Madonna, there would be nothing left of her; if no one had thought about Raphael Sanzio, he would have soon seen to it that someone did.(18)

In order to be fair to Naum Gabo, we must say that his statement should be read as a protest and rejection of the work of art as an imperfect image of an ideal form. Elsewhere Gabo propounds the thesis that art is a social force, i.e., that it will be the values in the culture of the individual artist that will determine his choice for the particular set of rules he employs in "constructing" his art. He says: "Abstract art ... involves the whole complex of human relations to life. It is a mode of thinking, acting, perceiving and living."(19) In their Constructivist Manifesto of 1920 Naum Gabo and Antoine Pevsner(20) formulated the rules of their art, in summary, thus:

- (18) The foregoing is modelled on and paraphrased from Bertrand Russell's "Descriptions", in Introduction to Mathematical Philosophy, 2nd ed., London: Allen & Unwin, 1920.
- (19) Gabo, N., "Constructive Art: An Exchange of Letters between Naum Gabo and Herbert Read", in Horizon, London, vol. X, #55, July 1944, pp. 57-65.
- (20) Both men are brothers; In 1914 Naum changed his name to Gabo to distinguish himself from his brother.

1. To communicate the reality of life, art should be based on the two fundamental elements: space and time.
2. Solid volume is not the only spatial concept.
3. Kinetic and dynamic elements must be used to express the real nature of time; static rhythms are not sufficient.
4. Art should stop being imitative and try instead to discover new forms. (21)

The first and the last of these rules are inclusive general statements, the second and third are exclusive principles. The former justify the admission of constructivism in the realm of art; the latter place it legitimately in the realm of sculpture. Space is conceived not as defining sculptural mass but as transparencies. This concept has its parallel in the overlapping planes used by the cubists. The kinetic (or kinaesthetic?) element expressed by the idea that the objects in a work of art are related as moving parts sometimes is exemplified by linear means, sometimes by operating mechanisms. If colours are introduced, they are mostly confined to the primary colours, red, blue and yellow, but colour, generally, does not play an important part in constructivist art. Light, instead of being conceived as colour, is understood temporally as linear movement or mechanical speed, and spatially as transparencies.

It is not at all difficult to show that space, time and colour are indeed the fundamental elements, or to use the Wittgenstein phrase, "forms of objects", with which the artist, any artist, operates according

(21) Herbert Read, in Introduction to N.Y. Museum of Modern Art Catalogue, Naum Gabo and Antoine Pevsner, N.Y.: 1948, p. 10.

to some plan. Constructivism is an attempt to describe in one particular way, according to a single plan, what the world is like; and as such it does not differ from any other description according to single plan, such as Cubism, Neo-plasticism, Futurism, etc., from the modern era, or whatever "school" we wish to choose from any other era. This asserts nothing about the world; it only shows that the world can be described in that particular way in which as a matter of fact it is described. In a sense Kandinsky's "space explosions" do not differ basically from El Greco's "nervously scattered lights": there is the picture plane and format, colours and lines which form static and dynamic planes and volumes; these overlap and by overlapping, or by their axial placement, create movement; there are tensions of bulges and angles which express potential movement; there are colour gradations with movement from light to dark; in a word, there are tensions, contrasts, gradations, movement and other relations between the elements to which we assign meanings. This is very well expressed by Piet Mondrian:

.... Universal beauty does not arise from the particular character of the form, but from the dynamic rhythm of its inherent relationships, ... from the mutual relation of forms. Art has shown that it is a question of determining the relations. It has revealed that the forms exist only for the creation of new relations ...

... The definitions (terms) 'figurative' and 'non-figurative' are only approximate and relative. For every form, even every line, represents a figure since we need

words to make our concepts understandable, we must keep to these terms.(22)

We have seen the importance of relations between tones in music. A Beethoven symphony and a Schönberg composition symbolize, so to speak, human experience through structures of sound, but whereas a Beethoven symphony is built upon one type of relationship between structures of sound whereby each tone is related to a common centre, and where the contrasts, gradation, tensions and resolutions are worked out by the demands for the tonic, the Schönberg twelve-tone music is built upon a different interrelationship of structure of sound, based on what we termed "relativity principle", whereby sounds are interrelated without the employment of a common centre. The relations of contrasts and gradations, tensions and resolutions are still there, but not of the kind inherent in tonal music. As a Beethoven symphony is full of association references to human life, so also "pure music" will never be disassociated from human actions and desires.

It is our contention that the situation in painting and sculpture is analogous to the situation in music: the "non-objective" artist never really thought of his "non-objective" paintings as being divorced from nature. Kandinsky says:

- (22) Piet Mondrian, "Plastic Art and Pure Plastic Art (Figurative Art and Non-Figurative Art)", in Circle, International Survey of Constructive Art, eds. J.L. Martin, Ben Nicholson, N. Gabo. London: Faber & Faber, 1938 ?, p. 41 and p. 42.

The isolated line and the isolated fish alike are living beings with forces peculiar to them, though latent. They are forces of expression for these beings and of impression on human beings ... But the voice of these latent forces is faint and limited. It is the environment of the line and of the fish that brings about a miracle: the latent forces awaken, the expression becomes radiant, the impression profound The environment is composition

... The composition is the organized sum of the interior function (expressions) of the work.(23)

It is not the object as a "thing" which attracts the artist:

There is an essential difference between a line and a fish. And that is that the fish can swim, can eat and be eaten. It has the capacities of which the line is deprived. These capacities of the fish are necessary extras for the fish itself and for the kitchen, but not for painting. And so, not being necessary they are superfluous.(24)

Finding of the "literary" values in a work of art superfluous, at least "extras", was in painting and sculpture a similar logical achievement as the rejection of the tonal relationship in music. It seems that by accepting the idea that the object as a "thing" plays a similar role in painting as the tonic in the tonal music, the next step in what is usually called "liberation of painting from the objective world" was to institute a new method (or methods) for the interrelation of the elements. As soon as the elements of art were seen as space-time units independent of a "common centre", they could be related to each other in many ways.

With this in mind, it is interesting and amusing to read

(23) Kandinsky, "Line and Fish", in Axis, II, 1935.

(24) ibid., p. 6.

Grohmann's perplexity in his analysis of Kandinsky's Composition VIII (1923, S. R. Guggenheim Gallery, New York):

The circles, triangles, and checkered figures, the linear elements - straight lines, angles, curves, semi-circles - stand side by side, occasionally overlapping, seemingly unconnected. Colours are reduced to minimum; the ground of the upper right is whitish, that of the lower left blue; the only exception to primary blues, red, yellows is the violet inside the black circle at the upper left, which dominates the picture. The pink aura around the circle fixes its position in space. But does the black circle recede into or protrude from the picture plane? The vermillion red circle tangential to it makes it seem to protrude, while the violet circle at the centre makes it recede. The pink aura contributes to the ambiguity. The rest of the composition is flat and it is impossible to say whether the variously coloured small circles create depth, or are merely points of rest in the staccato movement of the predominantly linear design. The colour areas around the linear elements contribute to the airiness of the painting. In the checkered figures blacks and whites predominate counterposing the small vermillion-coloured circles and the light blue triangle. The resulting balance is nonetheless enigmatic, or perhaps we should say that the angle standing in the middle makes all the elements converge in harmony?(25)

(25) Will Grohmann, Wassily Kandinsky, Life and Work, N.Y.: Harry N. Abrams, 1958, p. 190.

Appendix.

Feeling and Intellect in Art.

Our basic theme can be expressed something like this: Each work of art exhibits a criterion in terms of which the elements in the work of art are arranged in a definite order.⁽¹⁾ We are never able to give rational grounds for the adoption of one criterion rather than

- (1) In this thesis I am concerned only with problems connected with works of art and not with artifacts that are not primarily works of art, nor with things such as natural objects. As an answer to the question, "Can a 'work of art' be defined?" I am offering the following which I owe to Professor Barnett Savery: "A work of art is a sincere, imaginative creation, embodied in a sensuous form, expressing (conveying, embodying) feeling and/or ideas, which, when contemplated with the aesthetic attitude, gives an aesthetic enjoyment (satisfaction), some of which arises from the sensuous form contemplated." No doubt, we derive many intense aesthetic satisfactions from scenery, from natural objects, from artifacts, foods, drinks, etc., and, of course, also from the "rightness" or "orderliness" of the operations in any purely intellectual field such as logic and mathematics. To bring out the full force of the term "aesthetic enjoyment" ("satisfaction"), one would have to show that the aesthetic judgment is something quite different from moral, economic, intellectual, etc., judgment. Let me offer this simile of Wittgenstein as an example of what is meant by "aesthetic judgment" in contradistinction to "mathematical judgment": "Suppose the members of an imaginary savage tribe decorate the walls of their huts by writing on them rows of Arabic numerals - and suppose that what they write is exactly what would be written by someone doing arithmetical calculations. They do it exactly right every time, but they never use it except for decoration - never use it in computing how much wood they need to build a hut or how much food they need for a feast, and so on. Would you say they were doing mathematics?" cf. D.A.T.G., A.C.J., "Ludwig Wittgenstein" in The Australian Journal of Philosophy, vol. 29, #2, 1951, p. 75.

another. We must search for the criterion adopted in the fields of biology, sociology, economics, politics, psychology, religion, in short, in experience; we do not explain anything by presupposing the intervention in art of some mysterious entities which no one understands.

Abstract art cannot be explained by saying that an "abstractionist" is inspired or "possessed" by the "Abstract Muse" and the "concrete" art by the intervention of the "Concrete Muse"⁽²⁾, but we come fairly close to saying something similar when we refer to abstraction in art as "dread of space" or "fear of nothingness" or "negation of life" as opposed to "affirmation of life" in "concrete" art. Even if we assume that by these pronouncements the issue has been clarified, we have actually done nothing more than tried to explain by a single narrowly defined principle something which has a wide signification. We seek to justify it by saying that we have thus found a universal principle which describes the world more simply; the fact is, we have formulated a specific theory, just one of many valid value-theories which has no absolute validity. We do have a basis for accepting one criterion for description of the world rather than the other, and it will be the values in our culture that will determine which it will be; but we should beware

- (2) cf. Plato, *Ion*, 534, 536; "The stone Euripides calls magnet does not only attract iron rings, but it also gives them power of attracting other rings as the stone itself does ... In the same way the Muse herself inspires the artists, and through their inspiration others are enraptured, and the line of the inspired is produced ... One poet is suspended from one Muse, another from another; he is said to be 'possessed'".

lest we make our criterion the Procrustean bed for one and all descriptions of the world. We can only formulate one generic meaning and n specific meanings of "abstract art", and among the latter we may find one defined as "negation of life". For, indeed, among the "abstract" artists as well as among the "concrete" ones there are some who tend toward what Thomas Mann calls the dark and death, and others who rejoice in light and air.

The confusion is generated by the widespread belief that abstraction is essentially artificial, "unnatural" and difficult, and that all untutored thought is "natural" and bound to concrete experiences of physical things. The fact is that reference to the real world does not disappear from "abstract" art as it ceases to use shapes and colours of the actually existing things any more than objectivity disappears from science when it ceases to talk in terms of earth, air, fire and water. As Susanne K. Langer points out, "If abstraction were really unnatural, no one could have invented it. If the untutored mind could not perform it, how did we ever learn it? We can develop by training only what is incipiently given by nature."⁽³⁾ In the case of "realistic" or "objective" painting and "program" music, it seems clear that recognizable objects such as chairs or persons in the painting, or the tonally "painted" portrait of an object or person in music, furnish a vocabulary of signs

(3) S. K. Langer, Form & Feeling, London: Routledge & Kegan Paul, 1953, p. 80.

which are then combined "grammatically" in various ways according to an arbitrary chosen set of rules.(4) In the case of "abstract" art it is the generality of signification (and, obviously, different sets of rules) that misleads some of us into strange and confused conclusions about its meaning.

Apart from (a) those who find no meaning in "abstract" art and (b) those who ascribe n meanings to it (thus making it meaningless) there are (c) those for whom departure from the "recognizable" presentation means one and only one thing. As an example of such a case (c) we are offering the view of Wilhelm Worringer(5) whose thesis of abstraction preceded Kandinsky's first non-objective painting by about two years and whom Kandinsky must have known in Munich.(6) Worringer also profoundly influenced Herbert Read during the latter's studies of philosophy of art in Munich; in fact, so much so that he finds in Worringer's Abstraktion und Einfühlung "all the features which distinguish abstract art as such ... clearly recognized", and thinks that it is indeed "... possible that the theory of abstract art not only preceded the practice of it in modern

- (4) Poussin, for example, said: "Painting is nothing but an image of incorporeal things despite the fact that it exhibits bodies."
- (5) Wilhelm Worringer, Abstraktion und Einfühlung, Munich: R. Piper Verlag, 1908. The English edition, Abstraction and Empathy, London: Routledge & Kegan Paul, 1953.
- (6) Herbert Read in The Philosophy of Modern Art, N.Y.: Meridian Books, 1957, a book dedicated to Worringer says that it is significant that Kandinsky's On the Spiritual in Art was published by the same house (R. Piper Verlag) in 1912, that had published Worringer's dissertation. The members of the "Blaue Reiter" group, which was also founded in Munich in 1912, were all philosophically minded and must have followed up Worringer's ideas. cf. pp. 105-106.

times, but actually inspired and influenced its development." (7)

There is no doubt in our mind that the writings of Kandinsky bear a strong mark of Worringer's thesis, but we are not convinced at all about the truth of Read's claims concerning Kandinsky's artistic development, or for that matter, the development of any of the "non-objective" or "abstract" painters in Munich.

In Abstraction and Empathy Worringer suggests that the cause for abstraction is man's inclination to withdraw from the world because of his antagonism toward it:

Now what are the psychological presuppositions of the tendency to abstraction? We have to seek them in the world feeling, ("Weltgefühl" or "Weltansichtung") of those peoples, in their psychological relation to the cosmos. While the tendency of empathy has as its condition a happy pantheistic relation of confidence between man and the phenomena of the external world, the tendency to abstraction is the result of a great inner conflict between man and his surroundings ... This state we might call a prodigious mental fear of space ... A comparison with that physical dread of open spaces, which as a disease afflicts certain persons, will perhaps explain more fully what we understand by the psychological fear of space. This physical dread may be popularly regarded as a vestige of a normal stage of human evolution, in which man, trying to become accustomed to surrounding space, could not rely on visual impressions alone, but still needed to be reassured by his sense of touch. As soon as he became a biped and thus for the first time appeared in human form, a slight feeling of insecurity must have remained ... " (8)

(7) H. Read, op. cit., p. 244; italics are Read's.

(8) Worringer, op. cit., p. 16.

Abstraction in art is shown by Worringer as characteristic of the Primitive, the Egyptian, Byzantine, Gothic, and Oriental art as well as of the "dehumanized" Contemporary art in a call for absolute values, and is contrasted with the late Greco-Roman, Renaissance, and the "naturalistic" ("representational") Western art which is characterized by empathy.⁽⁹⁾ Empathy is the happy, sympathetic approach of man to the world.

Elsewhere Worringer tells us about abstraction:

It expresses no joyful affirmation of sensuous vitality, but belongs rather to the other domain, which through all the transitoriness and chances of life strives for a higher world, freed from all illusions of the senses, from all false impressions, a domain in which inevitableness and permanency reign.⁽¹⁰⁾

- (9) The word "empathy" is a rendering of German "die Einfühlung" ("ein" in & "fühlung" feeling) by Greek "empathos" (in & feeling) and is used to denote, in this context, "the power of entering into the experience of or understanding objects or emotions outside ourselves," (O.E.D.), and was first made use of by the German psychologist and philosopher Theodor Lipps (1851-1941) in his Aesthetic, 2 vols., 1903-1906, where he makes all artistic appreciation depend upon man's capability of projecting himself into what is seen, or into the feeling of another. Bodily responses to a situation are very important: a column that is too slight to support a weight is unpleasant because it makes the observer strain unduly; a vertical line is apparently longer than a horizontal one because it induces the observer to stretch up and the movement is assigned to the line. The kinaesthetic sensation and muscular adjustments are the symptoms of emotions and ideas projected into the object. Wilhelm Worringer takes the theory of Lipps as his point of departure.
- (10) Wilhelm Worringer, Form in Gothic, London: G. P. Putnam's Sons, 1927, p. 37.

As soon as "yes" and "no" values are assigned to "abstract" and "concrete" art in an absolutistic theory such as Worringer's, exceptions to it are found and all sorts of ingenious excuses have to be sought to defend it. Herbert Read, for example, speaking of symbolic art⁽¹¹⁾ finds the Byzantine art an apparent exception to the rule that symbolic art, "based on the eidetic imagery" eventually loses its vitality as it is gradually divorced from immediate emotional association of the object symbolized. Yet in symbolic art man imaginatively transcends his "human, all too human" nature by contemplating "eternal" forms. It is not at all clear, then, whether symbolic art belongs to the "abstract" or "concrete" kind.

We noted earlier that it may be that Kandinsky's writings owe much to his knowledge of Worringer's thesis.⁽¹²⁾ Whenever he is philosophizing about the aims in art (to "turn away from the soulless life of the present toward those substances and ideas that give free scope to the non-material strivings of the soul")⁽¹³⁾; or when he wishes to point out the difference between "non-objective" and "objective" art ("humanity in general inclines to external beauty and knows nothing of internal

(11) Herbert Read, Art and Society.

(12) I have not been able to find positive sources of this. The hypothetical ones, and they are pretty convincing, I am using, are: Peter Selz, op. cit., p. 129 and Herbert Read, op. cit., pp. 105-106; also W. Grohmann, op. cit., pp. 85, 87, 145. Some writers, e.g., Lothar-Gunther Buchheim in Der Blaue Reiter und die Neue Künstlervereinigung München, Feldafing: Buchheim Verlag, 1959, makes no mention of Wilhelm Worringer.

(13) Wassily Kandinsky, op. cit., p. 33.

beauty"; "Schönberg's ... music leads us to where musical experience is a matter not of the ear, but of the soul ..."; "Matisse ... endeavours to render the divine")(14) his philosophy smacks of Worringer's aesthetics with its antagonism toward the world. Paul Klee also wrote in his diary lines reminiscent of Worringer: "The more horrible the world (as it happens to be in our day), the more abstract art becomes, while a happy world produces a secular art." In his autobiographical "Text Artista" Kandinsky gives psychological reasons for turning to "abstract" expression: "The naked body, its lines and movement sometimes interested me, but often merely repelled me. Some poses in particular were repugnant to me, and I had to force myself to copy them. I could breathe freely only when I was out of the studio door and in the street once again."(15) Franz Marc, turning toward "non-objective" painting shortly before his death, gave a similar reason: "Very early in life I found man ugly; the animal seemed to me more beautiful and cleaner, but even in it I discovered so much that was repelling and ugly that my art instinctively and by inner force became more schematic and abstract."(16)

(14) *ibid.*, p. 36.

(15) Kandinsky, "Text Artista", Wassily Kandinsky Memorial, N.Y.: Solomon R. Guggenheim Foundation, 1945, p. 65. This text by Kandinsky was published in Berlin in 1913 by *Der Sturm* under the title Rückblicke.

(16) Franz Marc, Briefe, Aufzeichnungen und Aphorismen, Berlin, 1920; letter, April 12, 1915, quoted in Peter Selz, op. cit., p. 129.

Worringer's thesis of abstraction and empathy, coupled with carefully chosen quotations from artists beginning with Monet⁽¹⁷⁾, is used to show the process of "dehumanization"⁽¹⁸⁾ in art by abstraction which is equated with "negation of the world". This theme is taken up by the Existentialists whose outlook on life, that it is incapable of rational account and devoid of senses, is said to express the mood of the contemporary Western World. In the "existentialist art"⁽¹⁹⁾ (if such an art exists) Worringer's "dread of space" is said to denote the same thing as Heidegger's "fear of nothingness". The existentialist philosophers have sought to show that it is possible for the individual to react to the world positively or negatively, with despair or with courage, with fear or with confidence, optimistically or pessimistically. Herbert Read says:

- (17) Monet is reportedly to have said to Clemenceau: "I am standing by the bed of a dead person, a woman whom - well, I had loved very much indeed ... and still love very much. I look at her eyelids. I said to myself: 'There is a kind of purple ... what kind of blue is contained in it? And red? And yellow?'" - Which is to show, according to Max J. Friedländer, in On Art and Connoisseurship, Boston: Beacon Press, (1942), 1960, p. 28, that "the absolute visual art was preparing to become inhuman." See also quotations supra, from Franz Marc and Kandinsky (notes 57 & 57).
- (18) cf. Ortega y Gasset, La dehumanizacion del'arte, Madrid: 1925.
- (19) Here should, I think appropriately, William Blake's verse in Annotations to Sir Joshua Reynolds' Discourses be quoted: "All pictures that's Painted with Sense and with Thought Are painted by Madmen, as sure as a Groat; For the Greatest the Fool is the Pencil more blest, And when they are drunk they always paint best."

In certain cases it seems possible for an individual to alternate between the extremes presented by this polarity - to tend in one psychological phase towards an affirmation of the world which results in naturalistic style, and in another psychological phase to tend towards a negation of the world, which results in an abstract style of art ... (20)

We wonder what psychological phase would account for an artist painting semi-abstractly? Semi-abstract style ought to result, then, from a simultaneous affirmation and negation of the world, which, clearly, is a contradiction and could result in nothing but nonsense. And even if we could be sympathetic towards such an explanation of semi-abstraction in art and say, "It is true that semi-abstract art is nonsensical or 'meaningless', in the sense that it has no clear content", this does not mean that art activity in which the aim is semi-abstraction is meaningless in the sense of "aimless".

We find it difficult to understand, in what sense Read is using "affirmation" and "negation" of the world. It could be that he means by "affirmation" that something is the case, and by "negation" that something is not the case; and in this sense the artist could affirm the world by depicting what is the case, and negate or reject the world by depicting what the world is not, or, to conform to our usage, what is not the case. Then our artist would have to hold up the picture in which he has affirmed the world, or hold up the picture in which he has negated

(20) Herbert Read, Philosophy of Modern Art, p. 24.

the world to make himself understood which of the pictures he affirms and which one he negates. Evidently, he cannot make a picture of the situation as non-existing; in order to make a picture of a situation as non-existing, instead of it he would have to make a picture of what did exist. In art the absence of a given quality is not itself a quality, nor the absence of a given relation is itself a relation.(21)

Probably, in Read's terminology, "affirmation" and "negation" are to be understood as "thesis" and "antithesis" of which the "synthesis" is that "particular kind of nullity"(22) which is the starting point for the "existentialist-artist" to ensure that art has "freedom".

- (21) A. J. Ayer in "Negation", The Journal of Philosophy, vol. 49, No. 26, 1952, (pp. 36-65), says:

"If I say that Mediterranean Sea is blue, I am referring to an individual object and ascribing to it a quality; my statement, if it is true, states a positive fact. But in "Atlantic is not blue" I am not ascribing any quality to an individual, and while my statement is true, there must be some positive fact which makes it so. Thus it would seem that the apparently negative statement is somehow doing duty for one that is affirmative, or that it is made true, if it is true, by some fact which it does not state ... (Actually) both "Atlantic is not blue" and "Mediterranean is blue" are descriptions only. "A is not blue" is relatively uninformative, but this does not say that it is not a description at all. To say that negative statements do not state positive facts does not lead us to say that, in the event of their being true, they are not as closely related to the fact as any other true statement. To say what things are not is itself a way of saying what they are."

All statements, then, become positive!

In my opinion the expression "negation of the world" is taken over by Worringer and Read from religious sources without it being properly applicable to art. If it is "negative judgment" they are talking about, the result may be endless and essentially sterile disputes.

- (22) Herbert Read, op. cit., p. 107.

Those theorists who explain abstraction in art by the primitive "dread of space" or by the modern "dread of nothingness" commit the "existentialist" fallacy. They point to the diminished earth in the yawning space between the stars in order to demonstrate that the "dread of space" once again rises in the hearts of men who must accept its immensity, grandeur, and terror. They point out the dread born from the two Great Wars: dread of the Bolsheviks, of the atom bomb, of incurable maladies, and, most of all, dread of Dread itself, the "Angst" of Nothingness. And, as we have seen, they assert that abstraction in art arises from that dread, and thus explain abstraction in Modern art. Their fallacy consists in that they apply a single principle to the description of art and insist that this principle has an absolute validity.

Suppose we grant them that this is so. Then the question arises, could the motif of dread be used repeatedly without it becoming a "dread by convention" and resulting in nothing but monotony and boredom? Indeed it seem that some modern artists (including writers and film makers) using the "existentialist" principle have succeeded in becoming thoroughly boring and monotonous. The "particular kind of nullity" of Read's is a phrase that reflects the boredom and monotony of this kind of art, but does not express the mood of the contemporary Western World. If we are to understand the process of abstraction in our art, then it is not by assuming that it is incapable of rational account and devoid

of sense, but rather as I have tried to show in this thesis, that the process of abstraction in art is achieved by making use of man's freedom to examine, to criticize, and to build imaginatively. It is the power of thought man possesses by which unthinking nature can be refashioned and transformed. The vision of beauty is attained when by unfettered contemplation the unconscious universe, Time and Space, is transmuted in the crucible of the imagination and when the most evil material, Death, Pain and Despair yield spectacles of beauty and increase human comradeship. It is the freedom man possesses to examine, to know and to criticize the hostile universe and to translate it imaginatively that is inherent in the process of abstraction in art. That is why art is always also an intellectual activity. Only by intellectual thought, artistic and philosophical, can man succeed in imposing order on chaos.

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