

Art in Theory

1900–1990

An Anthology of Changing Ideas

Edited by Charles Harrison
and Paul Wood

(1) the study of artistic elements as the material from which a work of art is formed, (2) the study of construction in creation as a principle whereby the artistic purpose is embodied, (3) the study of composition in art as a principle whereby the idea of a work of art is constructed.

The work of the department must be carried out in two directions: (a) a series of lectures based on the established program and (b) experimental research. We have not managed to pursue this experimental research owing to a lack of funds essential for the organization of laboratories.

The series of lectures 'Elements of Art' has been given, and now certain of their materials, observations, and ideas are being processed. The series of lectures on construction in nature, art, and technology is being developed. The series 'Composition' is being prepared.

In accordance with these aims and tasks, the department's scientific plan for 1922-3 consists of the following:

I The completion of a session of preliminary research work concerning the problem of construction in art. To this end, the following lectures on the problem of construction should be given at plenary meetings: (a) construction in extraaesthetic creation (utilitarian-productional construction), (b) architecture, (c) sculpture, (d) painting, (e) printing industry, (f) music, (g) plastic rhythm, (h) literature, (i) theater, (j) productional art.

II Research into primitive art and into all the aesthetic concepts that give primitive art its style. In this respect a number of specific tasks have been formulated: (1) Research into the laws of the statics and dynamics of primitive art: (a) in an individual or typical/group context; (b) in the evolution of one form from another. (2) Methods: (a) a formal, positive, art historians' approach, inasmuch as the research is connected with the formal and descriptive study of art objects; (b) a psychological approach, inasmuch as the research will concern the psychology of artistic creation and perception. (3) Materials: children's art, the art of primitive and backward peoples, primordial art, the primitives of early Christian and medieval art; primitivism in modern art; aesthetic concepts that characterize primitive art found, for the most part, in the art of the ancient East. (4) The materials can be developed with regard to (a) specific branches of art and (b) artistic groupings organically interconnected, and (c) they can be directed toward a synthetic summary of general inferences.

The research plan concerning the problem of primitive art and the aesthetic concepts that give art its style in the sphere of the spatial (visual) arts and vis-à-vis the material mentioned and outlined above can be defined thus: (1) Art that develops a plane or surface (so-called painting): (a) color, (b) line, (c) spatial expression, (d) material, (e) means of processing the surface, (f) laws of construction, (g) concept. (2) Art that organizes volumes (so-called sculpture): (a) material, (b) mass, (c) volume, (d) chiaroscuro, (e) color, (f) line, (g) surface, (h) laws of construction, (i) concept. (3) Art that organizes actual three-dimensional space (so-called architecture): (a) architectural mass, (b) space, (c) light and shade, (d) line, (e) surface, (f) color, (g) construction, (h) concept. (4) Types and phases of development of the general artistic concept in primitive art, their

positive and aesthetic bases. (5) The psychology of aesthetic expression and perception (within the framework of primitive art).

12 El Lissitsky (1890-1947) 'A. and Pangeometry'

Lissitsky was strongly affected by Malevich's Suprematism while working at Vitebsk in 1919. He in particular was responsible for the development of Suprematism as a graphic - and hence reproducible - means of building support for the Revolution. In the early and mid-1920s he was influential in establishing contacts between Russian revolutionary art and those with similar concerns in Western Europe. The present essay (in which Lissitsky employs two abbreviations: A. = Art; F. = Form) was originally published in German in Carl Einstein and Paul Westheim (eds.), *Europa Almanach*, Potsdam, 1925. The present translation by Eric Dluhosch is taken from El Lissitsky, *Russia: an Architecture for World Revolution*, London, 1970.

[...] The term A. resembles a chemist's graduated glass. Each age contributes its own quantity: for example, 5 drams of the perfume 'Coty' to tickle the nostrils of the fine gentry. Or another example, 10 cc of sulfuric acid to be thrown into the face of the ruling classes. Or, 15 cc of some kind of metallic solution that later changes into a new source of light. Thus, A. is an invention of the mind, i.e., a complex, where rationality is fused with imagination, the physical with the mathematical, the $\sqrt{1}$ with $\sqrt{-1}$. The series of analogies I shall present below are not offered as proof - my work serves that purpose much better - but in order to clarify my views. Parallels between A. and mathematics must be drawn very carefully, for any overlap is fatal for A.

Planimetric Space

Plastic F. - like mathematics - begins with counting. Its space is made up of physical, two-dimensional, flat surfaces. Its rhythm, the elementary harmony of the natural numerical series 1, 2, 3, 4...

The newly created object... let's say a relief, is compared with real objects in nature. For example, if the relief shows the front part of an animal hiding part of another animal behind, this then does not mean that the latter, the hidden part, has ceased to exist; it simply means that a certain distance exists between the two objects - a space. As a consequence, through experience the knowledge is gained that distance exists between objects and that objects exist *in space*.

Thus, the two-dimensional plane ceases to be merely a surface. The plane begins to include space, and the mathematical series 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$... is created.

Perspective Space

The simple flat surface perceived by the eye stretches and extends into vivid space, evolving into a new system. The perspective mode finds its expression

within this system. It is commonly assumed that perspective representation of space is objective, unequivocal, and obvious. People say, 'The camera too sees the world in terms of perspective,' but this ignores the fact that, contrary to common practice in the West, the Chinese have built a camera with concave rather than convex lenses, thereby producing an equally objective image of the world in the mechanical sense, but obviously quite different in all other respects. Perspective representation of space is based on a rigid three-dimensional view of the world based on the laws of Euclidean geometry. The world is put into a cubic box and transformed within the picture plane into something resembling a pyramidal form. [...] Here, the apex of the visual cone has its location either in our eye, i.e., in front of the object, or is projected to the horizon, i.e., behind the object. The former approach has been taken by the East, the latter by the West.

Perspective limits space; it has made it finite, closed. However, despite all of this, the 'sum total' (here 'sum total' means the aggregate of all possible numbers that may be geometrically expressed by a straight line – 'the fixed line') of A. has been enriched in the sense that each point, even one infinitely close, can be represented by a number. Planimetric space has produced the arithmetic series. In it, objects are perceived according to the relationship 1, 2, 3, 4, 5. . . . Perspective space resembles a geometric series, and objects are perceived according to the relationship 1, 2, 4, 8, 16, 32. . . . Until our time the 'sum total' of A. has not experienced any new extensions. However, a fundamental reorientation has taken place in science. The geocentric cosmic order of Ptolemy has been replaced by the heliocentric order of Copernicus. Rigid Euclidean space has been destroyed by Lobachevski, Gauss, and Riemann. The impressionists were the first artists who began to explode traditional perspective space. The methods of the cubists were even more radical. They pulled the space-confining horizon into the foreground and identified it with the surface of the painting. They built up the solid surface of the canvas by means of psychological devices (pasted-on wall tapestries, etc.) and by elementary destruction of form. They built from the plane of the picture forward into space. The ultimate results of this process: Picasso's reliefs and the contrereliefs of Tatlin. [...]

The establishment of the \square by K. Malevich (Petersburg 1913) was the first manifestation of the extension of the 'sum total' of A. (Mondrian accomplished the ultimate solution in the development of Western painting. He reduces surface to its primeval state, namely surface *only*, in the sense that there is no longer any spatial in or out of a given surface. Whenever Mondrian's principle is transposed by fashionable A.'s onto the three surfaces of a room, it turns into decoration.)

Our numerical system, being a positional system, has been making use of 0 for a long time, but only in the sixteenth century did 0 first cease to be regarded as 'nothing,' and become a numeral (Cordano, Tartaglia), i.e., a real number. And only now, in the twentieth century, has the \square been recognized as a plastic quantity, i.e., the 0 of the total body of A. This fully chromatic, fully color-saturated \square on a white surface has begotten a new conception of space.

New optical experience has taught us that two surfaces of different intensity must be conceived as having a varying distance relationship between them, even though they may lie in the same plane.

Irrational Space

Strictly speaking, distances in this space are measured only by the intensity and the position of rigidly defined color planes. Such space is structured within a framework of the most unequivocal directions: vertically, horizontally, or diagonally. It is a positional system. These distances cannot be measured with a finite scale, as for instance objects in planimetric or perspective space. Here distances are irrational and cannot be represented as a finite relationship of two whole numbers.

• An example of such irrationality is the relationship of the diagonal of a square to its side, i.e., $=\sqrt{2} = 1.4$, or more precisely, 1.41, or still more precisely, 1.414, etc., becoming increasingly more accurate, *ad infinitum*.

• Suprematism has extended the apex of the finite visual cone of perspective into infinity.

• It has broken through the 'blue lampshade of the heavens.' The color of space is no longer assumed to be a single *blue* ray of the color spectrum, but the whole spectrum – *white*. Suprematist space can be formed in front of the surface as well as in depth. If one assigns the value 0 to the picture surface, then one may call the depth direction – (negative), and the frontal direction + (positive), or vice versa. Thus, suprematism has swept away the illusion of three-dimensional space on a plane, replacing it by the ultimate illusion of *irrational* space with attributes of infinite extensibility in depth and foreground.

• This brings us to an A. complex that can be brought into juxtaposition with the mathematical analogy of an uninterrupted straight line, containing the whole natural numerical series which embraces: whole, decimal, negative, positive, and irrational numbers, including 0.

• However, that is not all. Mathematics has created a 'new thing': imaginary (imaginary = not real, assumed) numbers. These include numbers which, when multiplied by themselves, result in negative values. The square root of the negative of 1 is an imaginary thing called *i* ($\sqrt{-1} = i$). We now enter a realm that cannot be directly registered by the senses, that cannot be demonstrated, that follows from a purely logical construction and therefore represents an elementary crystallization of human thought. What does this have to do with sense perception, or simple vividness in A.? In their vital quest for the enlargement of F. in A., a number of modern artists – including some of my friends – believe that they can build up multidimensional real spaces that may be entered without an umbrella, where space and time have been combined into a mutually interchangeable single whole. Concurrently with this, they relate their theories with an altogether much too agile superficiality to the most advanced scientific theories, without having a genuinely deep understanding of these theories (viz., multidimensional space, theory of relativity, Minkowski's universe, etc.). Now the productive artist should certainly be allowed to expound

any theory he wishes, provided his work remains positive. In our field, only the direction of expansion has been positive up to now, but because of incorrect interpretations of seductive scientific theories the works themselves remain inadequate. [...] mathematically existing multidimensional spaces really cannot be visualized, neither can they be represented; in short, it is impossible to give them material form. We can only change the form of our physical space but not its structure, i.e., its three-dimensionality. We cannot change the degree of curvature of our space in a real way, i.e., the square or the cube cannot be transformed into any other stable form. Only a mirage may be capable of giving us such an illusion. The theory of relativity has provided evidence that quantities of time and space are dependent on the motion of each respective system. According to this theory, a man may die even before he was born. However, insofar as actual pragmatic sense-experience teaches us, things move the other way, forcing us to follow our own physical laws and building up A. F.'s which must needs affect us through the medium of our five physical senses.

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Time is only indirectly comprehended by our senses. The change of position of an object in space indicates the passage of time. When the speed of these changes approached the accelerated rate of our modern rhythms, artists thought it necessary to register these phenomena. The Italian futurists have caught the vibrations of quickly moving bodies flitting back and forth in space. However, bodies are brought into motion by means of forces. Suprematism created the dynamic tension of forces. The accomplishment of the futurists and the suprematists is represented by static surfaces characterized by dynamism. These are irrationally transposed and concretized oscillograms of speed and dynamism. Such an approach is quite unsatisfactory. [...]

We are now at the beginning of a period in which A. is, on the one hand, degenerating into making pasticcis of museum monuments, while, on the other hand, struggling for the creation of a new conception of space. I have demonstrated above that space and objects form a mutually functional relationship. This creates the problem of creating *imaginary* space by means of material objects.

Imaginary Space

Our capacity for visual perception is limited in the apprehension of motion and of the total condition of an object in general: for example, a recurring motion having a frequency of less than $\frac{1}{30}$ sec. gives the impression of constant motion. The motion picture is based on this principle. [...] However, the cinema depends on dematerialized surface projection using merely a single facet of our visual faculties. Of course it is well known that a material point in motion is capable of forming a line; for example: a glowing piece of coal in motion gives the impression of a luminous line, while the motion of a material line gives the impression of a surface or a volume. That is only one indication of how elementary solids can be used to construct an object that forms a whole in three-dimensional space while in a state of rest; yet when brought into motion

it becomes an entirely new object, i.e., a new space impression that will exist only during the duration of the motion, and is therefore imaginary. [...]

The infinitely variegated effects that may be achieved by the F. of imaginary space can already be sensed to a limited extent even today. The whole range of all of our visual capacities may thus be brought into play. To name a few: stereoscopic effects of motion by passage through colored media; color impressions produced by superimposition of chromatic clusters of light rays as the result of polarization, etc.; the transformation of acoustic phenomena into visual form. We can safely predict that everyday life will borrow widely from these A. achievements. However, as far as we are concerned, the most important aspect of this development is the fact that this A.-F. will be accompanied by the destruction of the old A. notion of monumentality. Even today the opinion still prevails that A. must be something created for eternity: indestructible, heavy, massive, carved in granite or cast in bronze – the Cheops Pyramid. The Eiffel Tower is not monumental, for it was not built for eternity but as an attraction for a world fair; no solid masses, but a pierced space needle. We are now producing work which in its overall effect is essentially intangible. For we do not consider a work monumental in the sense that it may last for a year, a century, or a millennium, but rather on the basis of continual expansion of human performance.

In the preceding I have traced the variability of our space conceptions and the subsequent F.'s of A., thus arriving at *nonmaterial materialism*. This sounds like a paradox. However, experience proves that *progress consists of our being compelled to accept and, indeed, to regard as self-evident and essential, views that our forefathers considered incomprehensible and were in fact incapable of comprehending*.