READINGS: CUBISM AND ABSTRACTION

Background:
Apollinaire, On Painting
Apollinaire, Various Poems
Background: Magdalena Dabrowski, "Kandinsky: Compositions"
Kandinsky, Concerning the Spiritual in Art
Background: Serial Music

Background: Eugen Weber, CUBISM, *Movements, Currents, Trends*, p. 254.

As part of the great campaign to break through to reality and express essentials, Paul Cezanne had developed a technique of painting in almost geometrical terms and concluded that the painter "must see in nature the cylinder, the sphere, the cone:" At the same time, the influence of African sculpture on a group of young painters and poets living in Montmartre - Picasso, Braque, Max Jacob, Apollinaire, Derain, and Andre Salmon - suggested the possibilities of simplification or schematization as a means of pointing out essential features at the expense of insignificant ones. Both Cezanne and the Africans indicated the possibility of abstracting certain qualities of the subject, using lines and planes for the purpose of emphasis. But if a subject could be analyzed into a series of significant features, it became possible (and this was the great discovery of Cubist painters) to leave the laws of perspective behind and rearrange these features in order to gain a fuller, more thorough, view of the subject. The painter could view the subject from all sides and attempt to present its various aspects all at the same time, just as they existed-simultaneously.

We have here an attempt to capture yet another aspect of reality by fusing time and space in their representation as they are fused in life, but since the medium is still flat the Cubists introduced what they called a new dimension-movement. Very soon, however, the original purpose of this-the capture and more complete reproduction of still objective reality-was lost from sight. The possibilities of the new idea were too good to miss and soon the artist became more interested in what had started as his means: that is, in purer and purer geometrical forms with no immediate relation to the object from which they derived, and in their increasingly abstract and arbitrary arrangement.

Cubism still sees space (and through space reality) as differentiated. Its great invention was to introduce movement into painting and use the possibilities of geometrical projection. But, in time, this came to appear still too concrete an approach to subjective reality and expression. As the Cubist technique was applied on ever more abstract lines, differentiation shrank and disappeared. Abstractionists see no more sections, no divisions between different segments of reality; and this is not surprising since reality has been transferred from the outside to the inside of the artist where experience is all one and everything exists on the same plane: a flower pot and a flower petal, a house and a T square, exist on the same plane, quite undifferentiated. Nothing is an island any longer, nothing (or everything) entire of itself.

BACKGROUND: STE GROVEART.COM

"CUBISM"

Term derived from a reference made to 'geometric schemas and cubes' by the critic Louis Vauxcelles in describing paintings exhibited in Paris by Georges Braque in November 1908; it is more generally applied not only to work of this period by Braque and Pablo Picasso but also to a range of art produced in France during the later 1900s, the 1910s and the early 1920s and to variants developed in other countries. Although the term is not specifically applied to a style of architecture except in former Czechoslovakia (*see* Czech cubism), architects did share painters' formal concerns regarding the conventions of representation and the dissolution of three-dimensional form (*see* §II below). Cubism cannot definitively be called either a style, the art of a specific group or even a movement. It embraces widely disparate work; it applies to artists in different milieux; and it produced no agreed manifesto. Yet, despite the difficulties of definition, it has been called the first and the most influential of all movements in 20th-century art.

1. Origins and application of the term.

The question of when Cubism began and who led the way in its development is inextricably tied up with the question of what distinguishes Cubist art, how it can be defined and who can be called Cubist. The beginnings of Cubism have variously been dated 1907, 1908, 1909 and 1911. In 1907 Picasso painted *Les Demoiselles d'Avignon* (New York, MOMA), which has often been considered a proto-Cubist work. In 1908 Braque produced *Houses at L'Estaque* (Berne, Kstmus.) and related landscapes, which prompted the reference by Vauxcelles to 'cubes'. The landscapes made by Picasso at Horta de Ebro in 1909, such as *Reservoir at Horta de Ebro* (New York, priv. col., see 1983 exh. cat., p. 245), were regarded by Gertrude Stein as the first Cubist pictures. The first organized group showing by Cubists took place in a separate room, 'Salle 41', at the Salon des Indépendants in Paris in 1911; it included work by Fernand Léger, Robert Delaunay, Henri Le Fauconnier, Jean Metzinger and Albert Gleizes, but nothing by Picasso or Braque.

By 1911 Picasso was accepted as the inventor of Cubism, a view that began to be challenged only with the publication of John Golding's influential history of Cubism in 1959; here Braque's importance and possible precedence was recognized for the first time. A later interpretation of Cubism associated especially with William Aubin, the impact of which has been considerable, identifies Braque categorically as the first. According to this view, the major breakthrough represented by Cubism centres on the depiction of space, volume and mass, especially as it occurred in Braque's L'Estaque landscapes. This view of Cubism is associated with a distinctly restrictive definition of which artists are properly to be called Cubists. Marginalizing the contribution of the artists who exhibited at the Salon des Indépendants in 1911, it focuses attention strictly on those who took a leading part in the development of this new mode of depiction, usually identified as Braque, Picasso, Juan Gris (from 1911) and, to a lesser extent, Fernand Léger (especially in 1911–12). douglas Cooper coined the terms 'true' Cubism and 'essential' Cubism to distinguish the work of these Cubists; the implied value judgement was intentional.

This restricted view of Cubism is linked to a formalist interpretation of its significance in 20th-century art. The assertion that the Cubist depiction of space, mass and volume supports rather than contradicts the actual flatness of the picture surface or the material qualities of the medium was made as early as 1920 by Daniel-Henry Kahnweiler, but it is also closely attuned to the art criticism of the 1950s and 1960s, especially that of Clement Greenberg. Contemporary views of Cubism were, in fact, complex and heteroclite; they were formed to some degree in response to the more publicized 'Salle 41' Cubists, whose methods were too distinct from those of the 'true' Cubists to be considered merely secondary to them. Alternative interpretations of Cubism have therefore developed. Such wider views of Cubism take in others who were later associated with the 'Salle 41' artists, most conspicuously Francis Picabia; the brothers Jacques Villon, Raymond Duchamp-Villon and Marcel Duchamp, who from late 1911 formed the core of the Puteaux group; the sculptors Alexander Archipenko, Ossip Zadkine and Joseph Csaky as well as the two regarded as 'essential' Cubist sculptors, Jacques Lipchitz and Henri Laurens; and painters such as Louis Marcoussis, Roger de La Fresnaye, František Kupka, Marc Chagall, Diego Rivera, Léopold Survage, Auguste Herbin, André Lhote, Gino Severini (after 1916), María Blanchard (after 1916) and Georges Valmier (after 1918). More fundamentally, the notion of 'essential' Cubism was later undermined by interpretations of the work of Picasso, Braque, Gris and Léger that stress iconographic and ideological questions rather than methods of representation.

Before 1914 the image of Cubism both in France and internationally was based on an extremely broad definition. A more heterogeneous view of Cubism is certainly encouraged by the earliest promotional writings by its practitioners and associates. Picasso, Braque and Gris made almost no published statements on the subject before 1914. The first major text, *Du cubisme*, was produced by two 'Salle 41' Cubists, Gleizes and Metzinger, in 1912; this was followed in 1913 by a far from systematic collection of reflections and commentaries by the poet and critic Guillaume Apollinaire, who had been closely involved with Picasso (from 1905) and Braque (from 1907), but who gave as much attention to artists such as Delaunay, Picabia and Duchamp. Along with Léger he identified these three with a new tendency, which he labelled Orphic Cubism or Orphism and which he considered of special significance for the future. Painters such as Gleizes, Metzinger, Delaunay and Duchamp were powerful influences alongside Picasso, Braque, Gris and Léger in the development of art related to Cubism in Russia, Czechoslovakia, Italy, the Netherlands, Britain, Spain and the USA.

2. Cubist milieux: Kahnweiler's Cubists and the Salon Cubists.

Picasso, Braque and Gris (and to a lesser extent Léger) were nevertheless distinct in important ways from the other Cubists. Braque and Gris were based in Montmartre until after World War I, while Picasso remained there until 1912. Most of the others, including Léger, were based on the Left Bank, in Montparnasse and in the Parisian suburbs of Puteaux and Courbevoie, and they moved in different, if overlapping, milieux. Before 1914 Picasso, Braque, Gris and Léger further distinguished themselves from the other Cubists by gaining the backing of a single committed dealer in Paris, the German Daniel-Henry Kahnweiler, who paid each of them a guaranteed annual income for the exclusive right to buy their work and who sold only to a small circle of well-informed clients. Kahnweiler's support gave his artists the freedom to experiment in relative privacy.

The other Cubists, by contrast, concentrated before World War I on building their reputations by showing regularly at the major non-academic Salons in Paris, the Salon des Indépendants and the Salon d'Automne, and for this reason they are sometimes referred to as 'Salon' Cubists. Inevitably they were more aware of public response and the need to communicate. The first public controversies generated by Cubism resulted from Salon showings, not only at the Indépendants of 1911 but also at the Salon d'Automne of 1912; the latter occasion led to Cubism being debated in the Chambre des Députés, since the Salon d'Automne was held in the State's Grand Palais and the State could, therefore, be said to have subsidized the scandal. It was against this background of public anger that Gleizes and Metzinger wrote *Du cubisme* (1912), not necessarily to explain Cubism but to persuade a general audience that their intentions were serious.

3. Technical and stylistic innovations.

Technical and stylistic innovations in Cubist painting and sculpture are easier to grasp than Cubism as a concept or art-historical category, particularly as a clear sequence can be outlined. The fact that almost all of these were introduced by Braque or Picasso reinforces the notion of an 'essential' Cubism, but the methods they devised were widely influential precisely because they were so open to different and often contradictory adaptations. The geometric simplifications of form that led to Vauxcelles's references to 'cubes' in 1908 were not in themselves innovative. The two basic methods favoured in early Cubism—the rendering of three dimensions by shifting viewpoints and of volume or mass in terms of flat planes—led to the complication, not the simplification, of the problem of depiction. Early Cubism, with its stress on multiple viewpoints and planar faceting, and its retention of model, landscape or objects as starting-points, has misleadingly been referred to as Analytical Cubism (see below), although the artists themselves did not use this term.

The role assigned to Picasso's *Les Demoiselles d'Avignon* (1907) as the painting that opened the way to Cubism is based above all on the exaggerated changes of viewpoint applied to the figures, especially the crouching nude on the right, whose head appears almost to have swivelled free from the shoulders so that it can be confronted in three-quarter view. The use of contrasting vantage-points for different features became a central factor in the practice of all Cubists, leading to the assertion that Cubist art was essentially conceptual rather than perceptual. The critic Maurice Raynal, a supporter of Cubism, was most responsible for the emphasis given to this claim from 1912. Raynal argued that the rejection of consistent perspective represented a break with the insistence on instantaneity that characterized Impressionism. The mind now directed the optical exploration of the world as never before. Art was no longer merely a record of the sensations bombarding the retina; it was the result of intelligent, mobile investigation.

Arguments for Braque's L'Estaque landscapes of 1908 as the first Cubist paintings rest, by contrast, on their depiction of space, mass and volume. In works such as *Houses at L'Estaque*, a restrained use of shifting viewpoints is combined with a rendering of forms in space in terms of a continuous pattern of flat surfaces, subdued in colour, that tilt in and out across the picture plane. Such methods, which were taken further in pictures such as *The Port* (spring 1909; Chicago, IL, A. Inst.), clearly provided a stimulus for Picasso's faceting of buildings and sky in his Horta de Ebro landscapes of summer 1909, for example *Factory at Horta de Ebro* (St Petersburg, Hermitage). A crucial technique here, later referred to as 'passage', involves the breaking of the contours defining both the things depicted and the overall faceting so that surfaces appear to flow together, blurring above all the distinctions between solid form and space, foreground and background. The emphasis later placed on the planar depiction of space, mass and volume arose from its usefulness in asserting the flatness of the support. The painting is seen both to capture the palpable three-dimensionality of the world revealed to the eyes and to draw attention to itself as a two-dimensional thing, so that it is both a depiction and an object in itself. From 1911 this emphasis on the status of the picture as an object was sometimes reinforced by Picasso and Braque by means of the admixture of sand and gesso in their paint to accentuate unevenness and tactility of surface. Picasso was the quickest, if not the first, to realize the implications of the planar depiction of space, volume and mass at their most extreme. In summer 1910, at Cadaquès in Catalonia, he produced pictures that so comprehensively broke down the distinctions between figures and spatial settings that the very identity of the subject was obscured; a major instance is *Female Nude* (Washington, DC, N.G.A.). From 1910 to 1912 the work produced by both Picasso and Braque was characterized by difficulties in the legibility of images that arose partly from the decision to open form fully out into space. Kahnweiler later referred to this kind of Cubist painting as Hermetic Cubism.

Early Cubism has been related to very different kinds of model or source. Picasso's work, for instance, has been linked above all to primitivism, that is to say to non-Western sources (*see* Primitivism, §2); the stylizations and distortions of *Les Demoiselles d'Avignon* seem to have come about in response to African sculpture, examples of which he knew in the collections of friends such as André Derain and in the Musée d'Ethnographie du Trocadéro in Paris, and to 'primitive' Iberian stone-carvings. The relation to African art has also been associated with the conceptual view of Cubism, since such sculptures were held to represent the figure emblematically rather than naturalistically, in terms of simple signs for facial features, limbs and other parts of the body. By contrast, Picasso's use of distortion from 1910 has also been related to the liberties taken by Ingres in idealizing human form. Yet, by general consent the major source for both the distortions created by the use of multiple perspective

and for the depiction of forms in terms of planes is the late work of Paul Cézanne, who was the subject of a major retrospective at the Salon d'Automne in 1907. There is little doubt that the concentration by Braque and Picasso between 1909 and 1912 on Cézanne's range of subjects—the posed model, still-life and landscape—was intended as a deliberate homage. Yet the extreme to which they exaggerated these formal strategies led to a fundamental change in the relationship between artist and subject not anticipated by Cézanne. They used these techniques not merely in response to things seen but positively to manipulate and even reconstruct their subjects, hence their temporary willingness to dispense with representational clarity in their Hermetic Cubist phase.

Later inventions in Cubism arose from a desire to emphasize further the material identity of the art object and to convey the subject-matter more lucidly. Probably in spring 1912 Picasso glued a factory-made piece of oilcloth printed with a realistic chair-caning pattern on to a small still-life, *Still-life with Chair-caning* (Paris, Mus. Picasso; see fig. 1). This is generally regarded as the first Cubist Collage. Later in 1912 Braque stuck a piece of cut-out wallpaper printed with wood-grain patterns on to a still-life drawing, *Fruit-dish with Glass* (Sept 1912; priv. col., see 1983 exh. cat., p. 85). This was the first Cubist papier collé. Papier collé differed from collage in that there was a more arbitrary relationship between the cut-out and stuck-on shapes and the things depicted: newspaper could stand for itself, but it could also depict anything from a glass to a soda-syphon; wood-grained wallpaper could depict the surface of a guitar or violin without being cut to the shape of either. Moreover, the broad areas of cut-out paper used in papier collé led to simpler compositions in which the flatness of the constituent planes was taken for granted, leading to more schematic signs for the representation of things. Linear configurations could denote figures and still-life objects in easily legible ways, as in Picasso's *Man with a Hat* (autumn–winter 1912; New York, MOMA), while remaining both obviously two-dimensional and capable of combining different viewpoints. At the same time, the use of cut-out shapes led to a novel development in the Cubist depiction of space: effects of depth could be achieved by contrived overlappings of one flat shape by another, and indeed it became possible to suggest the illusion of space in front of the picture surface by, as it were, piling planes up one over another, apparently outwards, as in Braque's *The Clarinet* (1913; New York, MOMA; for illustration *see* Braque, georges, fig. 1). Complications of another kind were created by the insertion of words, a development that preceded collage and papier collé but that was fully elaborated only with their invention.

Between 1912 and 1914 Picasso, Braque and Gris were stimulated by the possibilities opened up by these new techniques to produce a kind of Cubism different in many ways from that of the preceding four years. The subject-matter and the question of representation are not obscured, but the range of spatial effects made possible and the range of reference allowed by the insertion of words and of fragments from the 'real world' led to paradoxical, highly subtle and complex results. Later these developments stimulated other artists to investigate very different, even contradictory, directions. The simple compositions and overlapping planes of Cubist papiers collés were important for the geometric abstraction of both De Stijl and the Suprematism of Kazimir Malevich in Russia. The Cubist use of schematic signs and word play was equally significant for the Dada and early Surrealist work of artists such as Picabia, Max Ernst and Joan Miró.

The changes effected in 1912 in the Cubism of Picasso, Braque and Gris have tempted historians to make a clear distinction between Cubism executed before and after that date. Because of the technical basis of the change in collage and papier collé, the tendency has been to make the distinction in terms of procedural differences. It has been suggested that up to 1912 Cubist method was 'analytical', entailing the part-by-part, viewpoint-by-viewpoint dissection of the subject, while after 1912 it was 'synthetic', based on the construction or invention of representational signs using elementary and sometimes geometric shapes. Explained in these terms, the earlier work was based empirically on the study of things, while the later work was more purely inventive and free of such primary study. This distinction, from which the terms Analytic Cubism and Synthetic Cubism originated, was first developed by Gris and Kahnweiler from 1915 to 1921, and broadly speaking Picasso, Braque and Gris did tend more to 'synthetic' procedures after 1912. Their work prior to 1912, however, was not exclusively 'analytical', and synthesis or invention was a key factor in their Cubism from the beginning.

Invention and a conceptual rather than perceptual view of art are related preoccupations in Cubism. Moreover, since Cubist art consistently stressed the directing role of the artist's will, the assertion of the independent status of the work was accompanied by a corresponding emphasis on the degree of control exerted by the person making it. The practice of metamorphosis, introduced and developed above all by Picasso between 1912 and 1914, further underlined the importance of this subjectivity. The simpler the signs used in the process of depiction, the more similar and therefore the more interchangeable they became. As early as 1909 Picasso developed a major still-life from sketches for a figure composition. *Table with Loaves and Bowl of Fruit* (early 1901; Basle, Kstmus.) has its origins in a series of studies for a painting, *Carnival at the Bistro*, which Picasso never executed. The inanimate items laid here upon the table are transformations of the *commedia dell'arte* figures ranged behind the table. After 1912 Picasso consistently exploited and made clear the interchangeability of figures and objects in his work. The determining role of the artist's imagination was made still more explicit. The use of metamorphosis by Picasso and to some extent by Gris was to influence the Surrealists in the 1920s, especially Joan Miró and André Masson.

In sculpture, two Cubist pictorial innovations were of particular significance: first, the fusion of solid and space, and second, collage and papier collé. From the first followed the positive treatment of space in sculpture and the development of positive/negative reversals (positive features depicted by negative spaces and vice versa). Picasso anticipated this with a *Head of a Woman (Fernande)* (bronze, autumn 1909; Paris, Mus. Picasso), but the earliest to exploit it ambitiously in sculpture was Alexander Archipenko in 1910–11 and especially in 1912–13, for example in *Medrano II* (1913; New York, Guggenheim; for illustration *see* [Archipenko, alexander](#)). From collage and papier collé came Cubist construction and [Assemblage](#). Archipenko was again important in this respect, but Picasso's role was more central and influential. His first substantial construction was a metal *Guitar* (1912; New York, MOMA; *see* Iron and steel, fig. 6), but for the most part his early Cubist constructions, starting late in 1912, were made from varied materials and came directly out of collage and papier collé. The additive nature of collage, coupled with the suggestion of space in front of the picture surface achieved by overlapping planes in papier collé, led to the actual building of elements out from the support to form reliefs such as *Mandolin and Clarinet* (painted wood and pencil, 1913; Paris, Mus. Picasso).

The additive and improvisational insouciance of these three-dimensional compositions, which were often left deliberately untidy in appearance, contrasts strikingly with sculpture produced by traditional modelling and carving techniques that entailed either moulding or cutting away from a homogeneous, usually dense material such as clay, plaster, stone or wood. By contrast with such traditional methods, which required an elaborate craft training and often the collaboration of others for carving or casting, these Cubist constructions could be easily assembled using basic non-specialized skills. They were, moreover, characteristically flimsy and open, as in the case of two *Guitars* made of paper and string in late 1912 (Paris, Mus. Picasso), not heavy, durable and monolithic. Of the Cubist sculptors working in France it was Laurens who responded most inventively to Picasso's constructions, especially between 1915 and 1919 with works such as *Bottle and Glass* (1918; Paris, Pompidou) and *Guitar* (1917–18; Cologne, Mus. Ludwig; for illustration *see* [Laurens, henri](#)); but as they could be seen by visitors in the studio or as illustrations in the periodical *Soirées de Paris* in 1914, their impact was also felt outside France. Indeed, Cubist construction was as influential as any pictorial Cubist innovation. It was the stimulus behind the proto-Constructivist work of both Naum Gabo and Vladimir Tatlin and thus the starting-point for the entire constructive tendency in 20th-century modernist sculpture.

4. Meanings and interpretations.

The Cubism of Picasso, Braque and Gris had more than a purely technical or formal significance, and the often distinct attitudes and intentions of the other Cubists produced not so much a derivative of their work as different kinds of Cubism. It is by no means clear, in any case, to what extent these other Cubists depended on Picasso and Braque for their development of such techniques as faceting, 'passage' and multiple perspective; they could well have arrived at such practices with little knowledge of 'true' Cubism in its early stages, guided above all by their own understanding of Cézanne. The works shown at the Salons of 1911 and 1912 by these other Cubists extended beyond the conventional Cézanne-like range of subjects favoured by Picasso and Braque to include large-scale modern-life subjects and even allegory. Aimed at a large Salon public, these works made clear use of Cubist techniques of faceting and multiple perspective for expressive effect in order to preserve the eloquence of subjects that were richly endowed with literary and philosophical connotations.

At the Indépendants of 1911, Le Fauconnier's *Abundance* (1910–11; The Hague, Gemeentemus.) gave allegorical expression to a theme that concerned not only the 'Salle 41' Cubists but also the [Abbaye de créteil](#), a group of writers and artists that included Alexandre Mercereau, Jules Romains, Henri-Martin Barzun, René Arcos, Charles Vildrac and Georges Duhamel (1884–1966). Le Fauconnier here used the allegory of fruitfulness to represent life as a process of incessant birth and rebirth, giving symbolic expression to the key notion of 'duration' proposed by the philosopher Henri Bergson according to which life is subjectively experienced as a continuous forward movement in time, with the past flowing into the present and the present merging into the future. The other Salon Cubists were also attuned to this concept—in *Du cubisme* Gleizes and Metzinger explicitly related this sense of time to multiple perspective—and to Bergson's insistence on the elasticity of our consciousness of both time and space. They gave physical expression to this blurring of distinctions by means of 'passage', using the faceted treatment of solid and space, and effects of planar interpretation to convey a physical and psychological sense of the fluidity of consciousness in Bergson's terms. These concerns are related to Jules Romains's theory of Unanimism, which stressed the power of collective feelings to break down the barriers between people. The one major innovation that one can be sure was made independently by the Salon Cubists, that of 'simultaneity', came of a conviction also rooted in their understanding of Bergson that the divisions of space and time should be comprehensively challenged.

Delaunay's *City of Paris* (1910–12; Paris, Pompidou) and Léger's *The Wedding* (*c*. 1911; Paris, Pompidou, see fig. 2), both shown at the Salon des Indépendants in 1912, give form to this concept of simultaneity by presenting different motifs as occurring within a single time frame: Delaunay brings together the quais on the Seine, the three Graces, a view across the roofs and the Eiffel Tower, while Léger unites a wedding group with fragmentary views of a village setting. The subjects themselves again carry strong overtones of ideas derived from Bergson

and Unanimism: for Romains the city was a Unanimist entity, a psychological as well as a physical fact, where responses to the past and the present interpenetrate; an event like a wedding was seen as a powerful emotional occasion through which the past is precipitated into the future with collective force. The conjunction of such subject-matter with simultaneity aligns Salon Cubism with early Futurist paintings by Umberto Boccioni, Gino Severini and Carlo Carrà; these Italian works, though themselves made in response to early Cubism, led the way in the application of techniques of simultaneity in 1911–12.

The Cubist work produced before 1912 by Picasso, Braque and Gris had little to do with Bergson, but wide cultural, literary, philosophical and even scientific and mathematical connotations have also been attributed to it. The scientific and mathematical connection was something made very generally in relation to Cubism. In the case of Picasso, Braque and Gris it followed from their known involvement with an amateur mathematician, Maurice Princet, around 1910–11. Princet introduced them to new mathematical developments popularized by Jules Henri Poincaré (1854–1912) and to currently fashionable theories of the [Fourth dimension] and the 'hypercube', although they were unaware of the theories of Albert Einstein. Ancient and Renaissance theories of proportion were also considered relevant, especially to the Duchamp brothers and others involved in the *Salon de la Section d'Or* in late 1912 (*see* [Section d'or (ii)]), though of the Montmartre Cubists only Gris was drawn to them.

These quasi-scientific and mathematical interests were linked with the 'hermetic sciences', the occult and alchemy. Of the writers sympathetic to Cubism, Mercereau and Gleizes's brother-in-law Jacques Nayral were actively engaged in Occultism, while Apollinaire and Jacob are known to have dabbled in the cabbala, alchemy and the writings of hermeticists such as Eliphas Lévi. Apollinaire's concept of Orphism had a clear mystical aspect, which followed from its roots in Greek myth, and alchemical themes seem to have been touched on in Duchamp's subject-matter from 1912 and in works by Marc Chagall such as *Homage to Apollinaire* (1913; Eindhoven, Stedel. Van Abbemus.). Picasso is also thought to have shared the enthusiasm of Apollinaire and Jacob for magic and the occult; indeed, it is possible that, like them, he thought of his Cubist works as magical mediators between himself and a hostile world.

Just as the Salon Cubists were linked with the Abbaye de Créteil group, so the early Cubist work of Picasso, Braque and Gris was associated with the post-Symbolist and sometimes proto-Surrealist poetry of Apollinaire and Jacob, and also with 19th-century Symbolist poetry, especially that of Stéphane Mallarmé. Their interest in Mallarmé has often been corroborated, and the obscurity of their 'hermetic' Cubism of 1910–12 has been related to Mallarmé's late poetic practice, by which things are not named but evoked through the images or sensations stimulated by their presence. Apollinaire's lyrical variant on these methods, arising from his ability to take ordinary things as a starting-point for series of images possessing 'supernatural' qualities, clearly relates to the use of banal subjects by Picasso and Braque as the springboard for arcane yet suggestive clusters of lines and planes. Indeed the poet Pierre Reverdy, who was also close to Picasso, Braque and Gris, could claim that the importance of Cubism lay essentially in the fact that it had consolidated changes wrought first in poetry by Mallarmé and Arthur Rimbaud. It is also clear that the emphasis placed by these painters on the autonomy of the elements of their art (colours, lines, forms) and their belief in the directing role of the subjective imagination were extensions of Symbolist attitudes. This association between Cubism and Symbolism relates closely to the association often made between Cubism and the aesthetic theories of Immanuel Kant, particularly his theory of form as the key to beauty as elaborated in *Kritik der Urteilskraft* (Berlin, 1790).

The most extreme directions suggested by Cubism were not those followed by Picasso and Braque, who resisted the invitation to abstraction inherent in their most obscure Hermetic work. For them, the assertion of the autonomy of the work as an object was no more important than the task of representing things as informatively, suggestively and from as many different aspects as possible. Collage and papier collé resulted in part from a desire to shift the balance back towards 'real' things. The other Cubists, by contrast, especially Jacques Villon's Czech neighbour, František Kupka, and those grouped together as Orphists by Apollinaire (Delaunay, Léger, Picabia and Duchamp), accepted the invitation to abstraction with some enthusiasm.

Kupka's painting from 1912, rooted in his formative years in Prague and Vienna, was metaphysical in orientation. Duchamp in 1912 and Picabia from 1912 to 1914 developed an expressive and allusive abstraction dedicated to complex emotional and sexual themes, and in Duchamp's case to theories of the fourth dimension. From 1912 Delaunay painted a series of paintings entitled *Simultaneous Windows* (e.g. 1912; Hamburg, Ksthalle; for illustration *see* Abstract art, fig. 1), in which he combined planar structures derived from Hermetic Cubism with bright prismatic hues based on Michel-Eugène Chevreul's theories of simultaneous colour contrasts; the colour in early Cubist paintings had been distinctly subdued. In 1913–14 Léger produced a series entitled *Contrasts of Forms* (e.g. 1913; Philadelphia, PA, Mus. A.), which were also based on a theory of contrasts but which gave equal stress to colour, line and form. His Cubism, even in this abstract guise, was explicitly associated with themes of mechanization and the celebration of modern life. Apollinaire supported all these developments in *Les Peintres cubistes* (1913), writing of a new 'pure' painting in which the subject no longer counted, but in spite of his use of the term Orphism these kinds of abstract Cubism were so varied that they defy attempts to treat them as a single category.

Although the importance of the subject was played down in the 'pure' painting practised in 1912–14, such art in its several forms was considered to carry meanings beyond the simply aesthetic. Picabia and Duchamp were dedicated to an expressive project with psychological and arcane overtones. Léger declared that he wanted to convey the dissonant energy of the modern by means of pictorial contrasts, and in his essay 'La Lumière' (first published in German translation in *Der Sturm* in 1913) Delaunay wrote in terms reminiscent of Bergson of his simultaneous contrasts as conveying 'the movement of the world'. It is understandable, therefore, that Delaunay's Orphism accompanied the ambitious further development of simultaneity in its broader Cubist and Futurist sense, and that it did so as the pictorial complement to developments in the poetry of Apollinaire and the Swiss adventurer-poet, Blaise Cendrars. In 1912–14 Delaunay produced a series of pictures that combined simultaneous contrasts of colour with fragmentary clusters of images of modern life such as aeroplanes, posters, rugby players and the Eiffel Tower, for example in the *Cardiff Team* (1912–13; Eindhoven, Stedel. Van Abbemus) and *Homage to Blériot* (*c.* 1914; Basle, Kstmus.; for illustration *see* Delaunay (ii), (1)). Bergson's attack on the divisions of space and time was all-important here still; the Eiffel Tower owed its central role to its function as the radio-mast of Paris, the point at which global distances were nullified. It was the prime symbol of simultaneity.

Duchamp, also labelled an Orphist by Apollinaire, was responsible for a further extreme development based on Cubism: the Ready-made. The ready-made arose from a consideration of the linked notions of the painting as object and of 'pure' painting alongside the implications of collage and Cubist construction. On the one hand, the work is considered an object in its own right, pure and self-contained; on the other, it takes into itself the material detritus of the world. It was a short step to the decision that an ordinary object could be presented, with irony, as a self-sufficient work of art representing nothing but itself, as Duchamp did in 1913 by attaching a bicycle wheel to a kitchen stool and in 1914 by selecting a bottle-drying rack as a sculpture in its own right.

While stopping short of such extreme conclusions, the works made after 1912 by Picasso, Braque and Gris were wide-ranging in their form and meaning. Braque pursued musical analogies by his use of words, for example in collages such as *Glass, Newspaper, Packet of Tobacco and Sheet Music* (spring 1914; Chicago, IL, A. Inst.) and in his concentration on subjects such as *The Musician* (1917–18; Basle, Kstmus.). Gris produced subtle word plays and introduced references to such disparate interests as Apollinaire's poetry and the popular *Fantomas* novels. Picasso, however, most effectively widened the range of meaning in Cubism, playing on the ambiguous metamorphic relationships between inanimate objects and figures, using bulbous organic shapes and extreme distortion to create comic and even grotesque sexual suggestions, and also using words in a witty manner, sometimes injecting a sexual or scatological humour reminiscent of the *Ubu* plays by Alfred Jarry, as in the highly suggestive placing of the words 'trou ici' (hole here) in relation to department-store lingerie advertisements in the collage *Au Bon Marché* (winter 1912–13; Aachen, Neue Gal.). Early in 1913 Picasso used press-cuttings concerning the Balkan War as a way of alluding to the climate of rising nationalism and international tension that would culminate in World War I. The very heterogeneity of Cubist art by Picasso, Braque and Gris after the invention of collage and papier collé can be thought of as a representation of the disparateness and intensity of early 20th-century urban experience.

FOURTH DIMENSION.

Term, widely used in early 20th-century art, signifying a higher dimension of space beyond immediate sensory perception. This concept enjoyed its greatest popularity between *c.* 1880 and *c.* 1920. It was an outgrowth of the 19th-century development of geometries of more than three dimensions (*n*-dimensional geometries), but by the end of the century the fourth dimension was discussed in philosophical and mystical terms as often as it was treated geometrically. Artists in nearly every major modern movement between 1900 and 1930 responded to it, making it one of the unifying themes of modernism. Despite the variety in the popular treatments of the subject, all of the artists interested in the fourth dimension before 1920 understood it as an aspect of space. Only after 1919 and the popularization of Einstein's General Theory of Relativity, with its space–time continuum, did the definition of the fourth dimension as time gain widespread acceptance.

Belief in the existence of a fourth spatial dimension, which might hold a reality truer than that of visual perception, encouraged artists to depart from visual reality and to reject completely such three-dimensional conventions as one-point perspective. The Cubists made the first artistic applications of a fourth dimension but did not abandon visual perception completely, whereas such other painters as Kupka, Malevich, Mondrian and van Doesburg found strong support in the idea for their creation of a totally abstract art. Artistic usages of the fourth dimension ranged from the geometrical approach of the Cubists and Duchamp (reinforced by the writing of the theoretical scientist Henri Poincaré) to the mystical, utopian visions of four-dimensional cosmic consciousness painted by Malevich, whose work was related to the writings of pyotr Uspensky. The fourth dimension also appealed to iconoclasts such as Duchamp as a subversion of long-standing 'truths' in the same way that non-Euclidean geometry (with its curved spaces) overturned the special status of Euclid's geometry.

The fourth dimension was also of interest within Italian and Russian Futurism, Suprematism, Constructivism, De Stijl wartime synthetic Cubism and Dada, and it attracted American artists in the circles of Alfred Stieglitz and Walter Arensberg, as well as Bauhaus artists and Surrealists. Like van Doesburg, the artists in the last two groups sought in the 1920s to merge the new temporal fourth dimension of Einstein's space–time world with the earlier spatial fourth dimension. The argument that a new language was necessary to deal with four-dimensionality was also made by such composers as Edgard Varèse and by such writers as Aleksey Kruchonykh and Gertrude Stein.

BIBLIOGRAPHY

C. Bragdon: *A Primer of Higher Space (the Fourth Dimension)* (Rochester, NY, 1913)

L. D. Henderson: *The Fourth Dimension and Non-Euclidean Geometry in Modern Art* (Princeton, 1983) [extensive bibliog.]

——: 'Mysticism, Romanticism and the Fourth Dimension', *The Spiritual in Art: Abstract Painting, 1890–1985* (exh. cat., Los Angeles, CA, Co. Mus. A., 1986)

LINDA DALRYMPLE HENDERSON

Background: Stephen Kern, *The Culture of Time and Space* (Harvard, 1983), pp. 140-152

The multiplication of points of view in painting had an impact far beyond the world of art. It created a new way of seeing and rendering objects in space and challenged the traditional notion of its homogeneity. The depiction of space in painting reflects the values and fundamental conceptual categories of a culture. In the Middle Ages the importance of persons and things in heaven and earth determined their size and position in space. With the introduction of perspective, objects were rendered to scale according to their actual size and were located in space to reproduce the relations of the visible world.' In 1435 the Florentine painter Leon Battista Alberti formulated the rules of perspective that were to govern painting for four hundred and fifty years. He intended to help painters create a unified pictorial space in which God's order, the harmony of nature, and human virtues would be visible. Samuel Edgerton has observed that this formulation of perspective was a "visual metaphor" for the entire Florentine world at that time: its politics were just coming under the authority of the Medici oligarchy; there was a growing rationality in banking and commerce that relied on mathematical orderliness and utilized the system of double-entry bookkeeping; the Tuscan hills were terrassed with neat rows of olive trees and parallel strings of grape vines, all controlled by a centralized land management; proportion and orderliness were valued in every area of culture and were expected to regulate decorum and dress." Although there were occasional variations or intentional violations of the rules of perspective, they governed the rendering of space in art until the twentieth century. Then, under the impact of the Impressionists, Cézanne, and the Cubists that perspectival world broke up as if an earthquake had struck the precisely reticulated sidewalks of a Renaissance street scene.

When the Impressionists left their studios and went outside to paint, they discovered a new variety of points of view as well as shades of color and light. They broke Alberti's rule that the canvas should be placed precisely one meter from the ground, directly facing the subject, and positioned it up and down and at odd angles to create new compositions. They moved in and out of the scene, and the frame ceased to be the proscenium of a cubed section of space that it had traditionally been. Daubigny carried to an extreme their rejection of the fixed point of view when he painted from a houseboat as it rocked at anchor or actually sailed along the Seine. With these new points of view the Impressionists abandoned the scenographic conception of space."

However varied the scope and angle of Impressionist space, it was essentially one space as seen from one point of view. Cézanne was the first to introduce a truly heterogeneous space in a single canvas with multiple perspectives of the same subject. In Still Life (1883-1887) a large vase is reconstructed from two points of view with the elliptical opening more rounded than a strict adherence to scientific perspective would allow and gaping fuller than the opening of the other vase standing next to it on the same flat surface in the same plane. In Still Life with a Basket of Apples (1890-1894) the corners of the table are seen from different vantage points and grafted together to create balance with the other shapes. His Portrait of Gustave Geofroy (1895) combines a frontal view of the seated subject with an aerial view of the table before him on which open books are lying with

almost no perspectival foreshortening. This optically impossible mixture of points of view enabled Cézanne to show all that he wanted of the man and his work and at the same time conform to the requirements of composition. Cézanne was enamored of the shape of Mont Sainte-Victoire and painted it hundreds of times. By using different perspectives for different parts of the landscape he gradually pulled it out of the distant background toward the foreground until in the later paintings it loomed large as a symbol of his lifelong fascination with form and space. His landscapes broke ground for modern art as he gouged out quarries and cleared trees to make the terrain of Aix-en-Provence conform to his artistic needs.

Cézanne's primary commitment was to the composition of forms on the flat surface of the canvas; conventions for accurately rendering volume and depth were secondary.Z' While most painters had tried to create an illusion of three-dimensional space, Cézanne accentuated the flatness of the picture surface and frequently violated the rules of perspective in deference to it. He never entirely abandoned the techniques for showing depth but compromised them when necessary. And so he broke up consistent linear perspective with multiple perspectives, he violated aerial perspective in landscapes by painting objects in the distance as bright or brighter than those in the foreground, and he occasionally chipped off a piece of pottery when overlapping would interfere with his overall design. He sought to reconcile the properties of volumes in three-dimensional space with the two-dimensionality of the picture plane, and his paintings vibrate from the tension. He also wanted to fuse perceptions and conceptions-the way we see things from a single point of view and the way we know them to be from a composite of several views. Experience tells us that the opening of a vase is circular, but when viewed from the side we see it as an ellipse. Cézanne combined the two perceptions visually with multiple perspectives.

These daring innovations were possible only for someone with a sharp sense of space. Cézanne's unique sensitivity to the effect of slight shifts in point of view is revealed in a letter to his son of September 8, 1906: "Here on the edge of the river, the motifs are plentiful, the same subject seen from a different angle gives a subject for study of the highest interest and so varied that I think 1 could be occupied for months without changing my place, simply bending more to the right or left."'s Subtle differences in form and perspective that most painters would not notice occupied Cézanne-fascinated him-for months. He wrestled with them until, as Merleau-Ponty believed, he created "the impression of an emerging order, of an object in the art of appearing, organizing itself before our eyes. -2' He "realized" objects in space as they take form, as the eye darts about the visual field and hovers around things until they are identified in space and integrated into our world of experience. For Cézanne an object in space was a multitude of creations of the seeing eye that varied dramatically with the most minute shifts in point of view.

One of the great fallacies of historical reconstruction is the characterization of events as transitional. The work of Cézanne is one of the most fully realized corpuses in the history of art, and it is particularly misleading to view it as a transition to modern art. Nevertheless the important innovations he made in the rendering of space-the reduction of pictorial depth and the use of multiple perspective= were carried further by the Cubists in the early twentieth century and have therefore come to be viewed as transitional. The Cubists repeatedly expressed their debt to Cézanne and used his techniques to create even more radical treatments of space. Their use of multiple perspective also shows a strong similarity to the cinema, which broke up the homogeneity of visual space.

Like modern art, the cinema offered some new and varied spatial possibilities. Theater viewers saw action in the same frame, from a single angle, and from an unchanging distance in a space that was stationary and uniform from beginning to end. But the cinema could manipulate space in many ways. The frame could be changed by moving the camera or changing the angle of the lens. The point of view or distance from the action could be shifted with different camera positions, and the space in view could move continuously with a pan. The multiplicity of spaces produced by these camera techniques was augmented by editing, which made it possible to shift quickly between points of view and break up spatial coherence even further. The cinema also showed places around the world to which the audience rarely had access. In 1898 a Viennese physician made a film of a surgically exposed pulsating heart. The camera also looked into the interior space of the human body by means of the new x-rays. An article of 1913 on "The Widening Field of the MovingPicture" described the "Roentgencinematography" of a radiologist at Cornell Medical College who made a film from a succession of x-rays of a mixture of bismuth subcarbonate and buttermilk as it passed through the intestines.

The two pioneers of Cubism, Picasso and Braque, incorporated the innovations of Cézanne and the cinema and brought about the most important revolution in the rendering of space in painting since the fifteenth century. They abandoned the homogeneous space of linear perspective and painted objects in a multiplicity of spaces from multiple perspectives with x-ray-like views of their interiors. Picasso's first Cubist work, Les Demoiselles d'Avignon (1907), showed two figures in frontal pose but with noses in sharp profile. The seated figure has her back to the viewer but her head is seen from the front. Delaunay's Cubist Eiffel Tower (1910-71; Figure 5) is assembled to suggest the ubiquity of the tower in Parisian life. Houses from different parts of the city are clustered under and about its base like gifts under a Christmas tree. Their windows peer at it from all sides, even from inside it. The lower section is shown from a corner and the ironwork of the rear is perched on the side to indicate both the airiness of the structure and that it can be seen from all directions. Part of the tower has been taken out and upper sections collapsed toward the base to suggest its height. The tower was a particularly good subject because it really could be seen from anywhere and symbo lized the Cubist objective to rearrange objects as seen from multiple perspectives.

One explanation for multiple perspective was that it enabled the Cubists to transcend the temporal limitations of traditional art. In 7910 the essayist Roger Allard described the Cubist painting of Jean Metzinger as "elements of a synthesis situated in time."Z9 The following year Metzinger explained that Cubists have "uprooted theprejudice that commanded the painter to remain motionless in front of the object, at a fixed distance . . . They have allowed themselves to move round the object, in order to give, under the control of intelligence, a concrete representation of it, made up of several successive aspects. Formerly a picture took possession of space, now it reigns also in time.""° In 1913 Apollinaire commented that Cubists have followed scientists beyond the third dimension and "have been led quite naturally . . . to preoccupy themselves with new possibilities of spatial measurement which, in the language of the modern studies, are designated by the term: the fourth dimension."" There was a popular interest in the fourth dimension in France at that time, which might have inspired the Cubists.'Z

In addition to rendering multiple points of view, the Cubists also revised the traditional concept of depth. Formerly artists conceived of painting as the representation of an object in three-dimensional space, but modern artists rejected the notion that art was supposed to represent anything. Rather it must be what it is-a composition of forms on a flat surface. In 1900 the art critic Maurice Denis announced this essential characteristic of modern art: "a picture-before being a war horse, a nude woman, or an anecdote-is essentially a flat surface covered with colors assembled in a certain order."" This flattening was accomplished by the Cubists in part by multiple perspective but also by multiple light sources, the reduction of aerial perspective, and the breakdown of discrete forms and consistent overlapping. All of these techniques can be seen in Braque's Still Life with Violin and Pitcher (191o; Figure 6). The violin is broken up and shown from several points of view. Color is limited to shades of white, black, and brown, and there is no aerial perspective. The wild overlapping suggests forms and depth, but it is impossible to determine exactly what forms in what depths. The light source is ambiguous and casts shadows in different directions, but the fold of paper at the top throws a distinct shadow to the left while the illusionistic nail casts one to the right. This contradiction further interrupts a consistent sense of depth. There is another ambivalence about two- and three-dimensional space with the molding on the wall, which indicates depth clearly at one corner but then breaks into the flatter composition of the rest. The Cubists, like Cézanne, never entirely abandoned depth but reduced it, creating tensions between the world of three dimensions that was their inspiration and the two-dimensionality of painting that was their art. The frompe-l'oeil nail is a symbol of this creative tension. It is the most unambiguously three-dimensional object in the painting and is represented clearly with an identifiable light source, but it also contradicts the illusion of depth by proclaiming that the painting is flat and could be nailed to the wall like a piece of paper. It Is a stake in the heart of the third dimension of painting.

The Cubists' break with the space of traditional art was the subject of an essay of 1912 by Gleizes and Metzinger. They argued that the convergence technique of perspective records only visual space, but to establish pictorial space the artist must react to the world, as does the viewer, with all of the faculties. "It is our whole personality which, contracting or expanding, transforms the plane of the picture. As it reacts, this plane reflects the personality back upon the understanding of the spectator, and thus pictorial space is defined-a sensitive passage between two subjective spaces." Modern art is no longer content with slavishness to the rules of scientific perspective. "The worth of river, foliage, and banks, despite a conscientious faithfulness to scale, is no longer measured by width, thickness,

and height, nor the relations between these dimensions. Torn from natural space, they have entered a different kind of space, which does not assimilate the proportions observed." That different kind of space must no longer be confused with "pure visual space or with Euclidean space." It is the space of all of the faculties and emotions and, if it is to be linked with any geometry, it would be a non-Euclidean geometry such as Riemann's."

The proliferation of perspectives and the breakup of a homogeneous three-dimensional space in art seemed to many to be a visible representation of the pluralism and confusion of the modern age. As early as 1923 Picasso tried to defend his achievement from such forced juxtapositions: "Mathematics, trigonometry, chemistry, psychoanalysis, music and whatnot, have been related to Cubism to give it an easier interpretation. All this has been pure literature, not to say nonsense, which has only succeeded in blinding people with theories."'S This is an important reminder that Cubism came out of pressures and challenges within art. Nevertheless Cubism did influence, and was influenced by, other developments. Chronophotography and cinema no doubt had some effect, however indirect, on the way Cubists rendered space and sought to give a sense of the development of an object in time as a construction of successive points of view. X-ray must have had something to do with the Cubist rendering of the interior of solid objects. In spite of Picasso's warning, critics continued to draw parallels between Cubism and a number of other cultural developments. Fritz Novotny suggested that the "alienation of objects from reality" in Cubism was symptomatic of a culture that affirmed the "unreality of place" and that was plagued by nihilism.-16 Siegfried Giedion linked Cubism with a new sense of the many-sidedness of moral and philosophical issues. ' Pierre Francastel saw Cubism as a reflection of the fragmented space of the modern age 3° Max Kozloff saw a connection with the relaxation of rules of grammar where words are run together as in the writing of Joyce .'q Wylie Sypher stressed its similarity to the shifting perspectives of the new cinema and used it as a metaphor for the modern "world without objects.""°

Painters and novelists faced contrasting challenges in reproducing the dimensions of experience. Painters, limited to a single instant, used multiple perspective to portray objects as they came into view in time. Writers, limited to a series of single settings, used multiple perspective to depict different views of objects in space. Proust and Joyce used the technique in several ways.

While riding in a carriage Marcel was moved by the sight of the twin steeples of the church of Martinville, which continually changed position as he approached them along a winding road. His description of the shifting steeples is a literary analog of a Cubist painting .'1 His account of successive views of a sunrise seen through the windows of a speeding train made the connection with painting directly: "1 was lamenting the loss of my strip of pink sky when 1 caught sight of it afresh, but red this time, in the opposite window which it left at a second bend in the line, so that I spent my time running from one window to the other to reassemble, to collect on a single canvas the intermittent antipodean fragments of my fine scarlet, ever-changing morning, and to obtain a comprehensive view of it and a continuous picture."'Z In addition to such multiple perspectives of objects viewed over a relatively short time, there is another proliferation of space in Proust that is produced over long stretches of time by the action of feelings on the settings of important events. After many years Marcel returned to the Bois de Boulogne to try and recapture the pleasures of his childhood. But all was changed. The carriages were replaced by motor cars; the women wore different hats. Space itself, he realized, was as malleable as the objects in it: "The places that we have known belong now only to the little world of space on which we map them for our convenience. None of them was ever more than a thin slice, held between the contiguous impressions that composed our life at that time; remembrance of a particular form is but regret for a particular moment; and houses, roads, avenues are as fugitive, alas, as the years. 43 Spaces are subject to changing perspectives, thoughts, and feelings and suffer the unceasing transformation of things in time.

We have already observed in a discussion of simultaneity how Joyce reconstructed events, such as those in the "Wandering Rocks" episode, from a number of points of view in order to give a fuller sense of them. He also envisaged a multiplicity of coexisting universes of different dimensions. Bloom reflects on the size of his universe and sees it as one of an infinite number enclosed within one another as in a set of Chinese boxes. He thinks of the star Sirius 57,000,000,000,000 miles distant, 900 times as large as the earth, and then of the nebula of Orion in which 100 of our solar systems could be contained. He then considers the infinitesimally small universes around him, "the incalculable trillions of billions of millions of imperceptible molecules contained by cohesion of molecular affinity in a single pinhead" and "the universe of human serum constellated with red and white bodies, themselves universes of void spaces constellated with other bodies." In the final account of his hero, Joyce mocks

the convention of giving a precise, single location of action. Bloom is in bed next to Molly and telling her about his day: "Listener S.E. by E.; Narrator N.W. by W.: on the 53rd parallel of latitude, N. and the 6th meridian of longitude, W.: at an angle of 45° to the terrestrial equator.,4' Here the relative position of the two lying head to foot is identified by means of this incongruous navigational jargon, which ironically brings to mind the impossibility of knowing the precise location of bodies in space. We know their exact location on earth, but where is the earth? Moreover, even if we did know that, Joyce implied, it would not reveal the crucial information about place. Odysseus's Mediterranean, Bloom's Dublin, his bed at 7 Eccles Street are not the essential settings, because the real action takes place in a plurality of spaces, in a consciousness that leaps about the universe and mixes here and there in defiance of the ordered diagraming of cartographers. Edmund Wilson has interpreted these shifting perspectives as part of a general movement in European culture. "Joyce is indeed really the great poet of a new phase of human consciousness. Like Proust's or Whitehead's or Einstein's world, Joyce's world is always changing as it is perceived by different observers and by them at different times."'S Thus the two most innovative novelists of the period transformed the stage of modern literature from a series of fixed settings in a homogeneous space into a multitude of qualitatively different spaces that varied with the shifting moods and perspectives of human consciousness.

In geometry and physics, biology and sociology, art and literature attacks were launched on the traditional notions that there is one and only one space and that a single point of view is sufficient to understand anything. Sometimes the historical record is generous and supplies abundant evidence for a cultural change. In this period it also supplied an interpretation of that change with the philosophy of "perspectivism."

After Nietzsche left the university he began to criticize the narrowness of academic thinking- a Platonism that denied the validity of knowledge acquired through the senses, a positivism that was blind to the inherent subjectivity of knowledge. Scholars, he wrote, "knit socks for the spirit.""° He came to life in the clear air outside the academy, and like the Impressionists who discovered a world of new colors en plein air, he found new philosophical topics and a fresh poetic language with which to write about them. In opposition to the positivists' belief in the truth of objective facts, he insisted that there are no such things, only points of view and interpretations, and he urged philosophers "to employ a variety of perspectives and affective interpretations in the service of knowledge." This philosophy was called "perspectivism," and in 1887 he proclaimed its method.

Henceforth, my dear philosophers, let us be on guard against the dangerous old conceptual fiction that posited a "pure, will-less, painless, timeless knowing subject"; let us guard against the snares of such contradictory concepts as "pure reason," "absolute spirituality," "knowledge in itself": these always demand that we should think of an eye that is completely unthinkable, an eye turned in no particular direction, in which the active and interpreting forces, through which alone seeing becomes seeing something, are supposed to be lacking; these always demand of the eye an absurdity and a nonsense. There is only a perspective seeing, only a perspective "knowing"; and the more affects we allow to speak about one thing, the more eyes, different eyes, we can use to observe one thing, the more complete will be our "concept" of this thing, our "objectivity." But to eliminate the will altogether, to suspend each and every affect, supposing we were capable of this-what would that mean but to castrate the intellect?'"

We must look at the world through the wrong end of the telescope as well as the right one, see things inside out and backwards, in bright and dim light. In this philosophy spaces proliferate with points of view. In the twentieth century perspectivism was formalized by the Spanish philosopher José Ortega y Gasset. Rationalists argue that there is one and only one truth that can be grasped by factoring out the errors that arise from viewing things from subjective points of view. Rejecting this approach, Ortega formulated his own theory of perspectivism in 1910: "this supposed immutable and unique reality . . . does not exist: there are as many realities as points of view."ö In 1914 he made perspective into the stuff of reality: "God is perspective and hierarchy; Satan's sin was an error of perspective. Now, a perspective is perfected by the multiplication of its viewpoints."°9 The rationalist position maintained the homogeneity of space, and Ortega countered that there were as many spaces in reality as there were perspectives on it. In a manifesto for the first issue of the journal El Especfador (1916), he reaffirmed the validity of the individual point of view. Reality is perspective. The war itself, he suggested, was brought about by a narrow-mindedness among nations that failed to see the larger context of their actions. People must react against this "exclusivism" and develop a broad outlook that embraces a multitude of perspectives."

In a lecture on the historical significance of Einstein, Ortega linked perspectivism and the general theory of relativity and maintained that the coincidence of their publication in 1916 was a sign of the time. The two doctrines signified a breakdown of the old notion that there is a single reality in a single, absolute space. "There is no absolute space because there is no absolute perspective. To be absolute, space has to cease being real-a space full of phenomena-and become an abstraction. The theory of Einstein is a marvellous proof of the harmonious multiplicity of all possible points of view. If the idea is extended to morals and aesthetics, we shall come to experience history and life in a new way."5' He also suggested ethical and political consequences. The peace broke down in Europe because each nation was fixed in a narrow outlook. The British "white man's burden," the French "mission civilisatrice," and the German "deutsche Kultur" were but different points of view on the same landscape, but each nation viewed its own as the only true one.

Ortega once described perspectivism in terms applicable to Cubism: "The truth, the real, the universe, life . . . breaks up into innumerable facets and vertices, each of which presents a face to an individual."s2 His philosophy itself reflected many others. He was influenced by, or noted parallels to, Riemann, Lobatchewsky, Mach, Einstein, Uexküll, Proust, and Joyce and shared their restlessness with conventional notions about the sanctity of a single space or point of view. He challenged what he felt to be an arrogance deeply embedded in Western culture, an egocentrism that believed that one point of view-be it that of a mathematician, philosopher, or nation-was alone correct. Knowledge progresses and cultures advance as the diversity of concrete experience is allowed to be heard. The world is understood by the observer who localizes reality "in the current of life which flows from species to species, from people to people, from generation to generation and from individual to individual, gradually possessing itself of more and more universal reality.",' There is danger that such a philosophy of perspective can become a runny, undisciplined pluralism, an excuse for having no point of view at all, but in this period it provided a corrective to the epistemological and aesthetic egocentrism that had dominated Western culture for so long.

Durkheim's theory of the social relativity of space gave weight to societies outside the Western world, and even Spengler was able to appreciate the broad range of achievements of cultures based on a different sense of space. Ortega's philosophy of perspectivism in its social and political implications lined up clearly on the side of pluralism and democracy against monism and monarchy. It implied that the voices of many, however untrained or chaotic, are a desirable check on the judgment of a single class, a single culture, or a single individual. Even Nietzsche, who had contempt for democracy and who railed against the leveling effect of the masses, understood that the overman must achieve transcendence through a continual struggle, and hence dialogue, with the masses. Zarathustra repeatedly returned to the masses, even though he was always misunderstood and continually threatened by contact with them. Although these various arguments on behalf of the heterogeneity of space did not always address themselves to the social and political terms of social equality versus social privilege and democracy versus monarchy, they form part of a general cultural reorientation in this period that w entially pluralistic and democratic.

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ABSTRACT ART

Term applied in its strictest sense to forms of 20th-century Western art that reject representation and have no starting- or finishing-point in nature. As distinct from processes of abstraction from nature or from objects (a recurring tendency across many cultures and periods that can be traced as far back as Palaeolithic cave painting), abstract art as a conscious aesthetic based on assumptions of self-sufficiency is a wholly modern phenomenon.

1. Origins and early experiments, to *c* 1913.

In the late 19th century, and particularly in Symbolist art and literature, attention was refocused from the object to the emotions aroused in the observer in such a way that suggestion and evocation took priority over direct description and explicit analogy. In France especially this tradition contributed to the increased interest in the formal values of paintings, independent of their descriptive function, that prepared the way for abstraction. In his article 'Définition du néo-traditionnisme', published in *L'Art et critique* in 1890, Maurice Denis proclaimed, in words that have since been much quoted, that 'It is well to remember that a picture, before being a battle horse, a nude woman or some anecdote, is essentially a flat surface covered with colours assembled in a certain order.' This definition of painting, which stresses the independence of form from its descriptive function while stopping short of a complete severing of links with perceived reality, continued to characterize the moves towards a more fully abstract art in France in the early 20th century.

A combination of circumstances helped lead a number of European artists towards abstract art in the years preceding World War I. The opening of ethnographic museums furthered an interest in art from other cultures and civilizations (*see* Primitivism, §2), which in turn encouraged artists to free themselves from conventional methods of representation. By looking to the arts of Africa and Oceania as much as to Cézanne, the major figures associated with Cubism were among the first to rethink the approach both to figure and space. In Picasso's *Female Form* (1910; Washington, DC, N.G.A.), for example, multiple views of the figure are incorporated in such a way that forms are fractured, and the surface is fragmented to the point where any link to the subject is so tenuous that it can be reconstructed only with the aid of the title. Although Picasso, like Braque, retained his commitment to subject-matter, other artists took the formal implications of Cubism to an even more abstract conclusion: around 1913 Giacomo Balla in Italy and Mikhail Larionov and Natal'ya Goncharova in Russia combined Cubist fragmentation of form with a representation of movement derived from Futurism to create abstract paintings. Certain artists associated with Dada, notably Hans Arp and Kurt Schwitters, later applied Cubist collage techniques to abstract compositions.

The first abstract paintings in the strict sense, dating from *c.* 1910, were underpinned by a strong philosophical undercurrent derived from 19th-century German Idealist thought, which posited the supremacy of mind over matter. Such beliefs were especially important to two of the earliest practitioners of abstract art, Vasily Kandinsky and František Kupka, and to other influential figures of the period such as Piet Mondrian and Theo van Doesburg. Kupka, who as early as 1911 in France was producing abstract paintings such as *Nocturne* (Vienna, Pal. Liechtenstein), was also among the first to elaborate theories about abstract art; in unpublished notebooks written between 1910 and 1914, he expressed a belief in the capacity of abstract form and colour to embody an 'idea' of universal significance beneath the surface of appearance. In Munich by 1910, the contested date of his first abstract watercolour, Kandinsky was formulating the theoretical possibility of abstract art in a text published in 1912, *Über das Geistige in der Kunst*. This proved to be one of the most influential and widely read theoretical treatises on the subject over the next 30 years and beyond.

The ground for abstract art was also prepared by 19th-century scientific theories. The descriptions of optical and prismatic effects of pure, unmixed colour initiated by Johann Wolfgang von Goethe in his *Farbenlehre* (1810) and extended by colour theorists such as Michel-Eugène Chevreul and Ogden Rood had a direct impact on such artists as Robert Delaunay, who extended Chevreul's term 'simultaneous contrasts of colour' to suggest that colour could be the means by which not only form but also the illusion of movement could be created in abstract paintings. In *Simultaneous Windows on the City* (1912; Hamburg, Ksthalle; see fig. 1) and related works, and in the *Circular Form* series, for example *Circular Forms: Sun and Moon* (1913; Amsterdam, Stedel. Mus.), Delaunay reduced the emphasis on representing objects so as to increase the impact of colour and light; both his work and his writings, which were quickly made available in German translation, influenced the Blaue Reiter artists Franz Marc and August Macke. It was the Italian artists associated with Futurism, however, whose development of an abstract language was most clearly conditioned by the challenge of representing speed and motion. Gino Severini, for example, developed the associative power of abstraction by fusing remembered experience with current sensation in paintings such as *Dynamic Hieroglyphic of the Bal Tabarin* (1912; New York, MOMA; for illustration *see* Severini, gino). During the same period in England, similar ideas were explored within the movement known as Vorticism. In his drawings and prints of 1912, for example, Wyndham Lewis transformed machine parts into cylindrical and geometric shapes in order to capitalize on the associations provoked by machinery independent of their forms. Around 1913 two American painters working in Paris, Stanton Macdonald-Wright and Morgan Russell, the instigators of a movement labelled Synchromism, created colour abstractions concerned with the twisting movement of form. Marcel Duchamp and Francis Picabia, two of the leading painters in a variation on Cubism christened Orphism by Guillaume Apollinaire, produced mechanomorphic paintings that transmuted vaguely mechanical and sexual parts into abstract forms. Duchamp's *The Bride* (1912; Philadelphia, PA, Mus. A.) and Picabia's *Udnie* (1913; Paris, Pompidou) invited the spectator to interpret the forms imaginatively from clues provided by their titles. During the same period another painter associated with Orphism, Fernand Léger, used abstract pictorial equivalents to capture the dissonant contrast of manmade machines set against the natural landscape. In spite of the central position of Paris in the development of a modernist avant-garde aesthetic, the continued devotion among French artists to recognizable subject-matter, combined with the absence of a firm metaphysical or theoretical basis for their experiments, ultimately restrained them from developing a full abstract language.

2. PIONEERS, 1912–20.

By the end of World War I such artists as Kandinksy, Mondrian and Kazimir Malevich were creating paintings that were less reliant on appearances, perception and physical sensation and that instead obeyed their own laws of colour and form. Stylistically, this encompassed a wide range from a loose, free-form approach, as in Kandinsky's *Improvisations*, to a tight geometric abstraction as practised by Mondrian and the de Stijl group. In spite of their differences, however, these artists shared an interest in esoteric doctrines that underpinned their commitment to abstract art.

Kandinsky's early writings were particularly influential for their analysis of colour, notably in *Über das Geistige in der Kunst*, and of form, which was the subject of an essay, 'Über die Formfrage', published in *Der Blaue Reiter Almanach* in 1912. Basing his approach to colour on the empirical theories of Goethe, Kandinsky went further in suggesting that colour, like music, can evoke certain emotional and psychological responses even when used non-representationally in a painting. Similarly, he argued that formal content was determined not by external appearances but by the 'inner necessity' of the artist's emotional response. In providing a theoretical justification for expressive abstraction, Kandinsky developed the notion of the affective purpose of art, basing this on the assumption that art must possess 'soul' in order to elicit a response from the spectator, and that this soul, manifested in the balance of colours and composition, is in turn dependent on the integrity of the artist. While Kandinsky's pictures of this period generally continued to combine apparently abstract forms with shapes suggestive of figures, animals and landscapes, in certain works, such as *Composition VII* (1913; Moscow, Tret'yakov Gal.), he approached pure abstraction.

The spiritual and moral dimensions of Kandinsky's art and theory, grounded in part on his understanding of Theosophy, were shared by Mondrian even before World War I. It was not until 1917, however, that Mondrian developed the basis of his geometric abstraction and a theoretical justification for it. In his essay 'Natuurlijke en abstracte realiteit' (1919), Mondrian followed the mystic philosopher M. H. J. Schoenmaekers, whom he had met in 1916–17, in elaborating a theory of universal beauty by renouncing the 'particulars of appearance' and embracing the 'abstraction of form and colour' within the precise formulation of the 'straight line and the clearly defined primary colour'. For Mondrian, as for Schoenmaekers and the Theosophists, the orthogonal, in line with a long history of divine geometry, was cosmically pre-eminent, as it expressed the mystical concept of life and immortality in a harmonious relationship. By 1921 Mondrian had conceived the basis of a style that he termed Neo-plasticism, which was based on the use of a black linear grid and on asymmetrically placed zones of primary colour. In such paintings as *Composition with Red, Yellow and Blue* (1921; The Hague, Gemeentemus.), 'dynamic equilibrium' is achieved by the juxtaposition of lines, planes and narrow bands of flat colour held in taut relation to each other.

The development by Malevich of a form of abstract painting known as Suprematism was also stimulated by topical esoteric concerns. He first exhibited 35 such paintings, each consisting of flat shapes such as quadrangles against light grounds, at the exhibition *Poslednaya futuristicheskaya vystavka kartin: 0.10* ('The last Futurist exhibition of paintings: 0.10'), held at the Dobychina Gallery in Petrograd (now St Petersburg) in 1915. The titles of many of the works referred to the concept of the Fourth dimension, which was evolved partly in response to Russian mystical philosophy, as a new form of consciousness that provided an escape into the world of the spirit (for illustration *see* Suprematism). To effect cosmic integration, Malevich, following the philosopher Pyotr Uspensky, affirmed the necessity of venturing into a new space–continuum by replacing the forms derived from nature with 'non-objective'—that is to say completely abstract—forms. The rectilinear planes featured in such paintings as *Untitled* (1915; Amsterdam, Stedel. Mus.) make no reference to things external to the picture, other than to mathematical figures such as parallelograms, yet despite this resolute flatness and expunction of associations, the disposition of overlapping forms against a white ground inevitably creates a sense of ebb and flow. In 1919, immediately after painting his *White on White* series of 1917–18 (*see* Malevich, kazimir, fig. 2), Malevich wrote about the use of white in terms of space travel, and in 1920 he even suggested the possibility of building a Suprematist satellite. During this period other artists in Russia, such as Il'ya Chashnik (1902–29), El Lissitzky and Gustav Klucis, began to develop their own variants of Suprematism. After the Revolution of 1917, Suprematism quickly came to be regarded as one of the major new artistic tendencies to challenge the conservative traditionalism of the old Tsarist order, leading abstract art to gain official support, if only temporarily, for the first time in its history.

Other artists, especially those based in central Europe, sought to counter the barbaric realities of World War I through abstraction. Both Hans Arp and Sophie Taeuber (later Taeuber-Arp) sought to approach eternal values and to deny human egotism in a series of *Duo-collages* made as collaborations in 1918. They hoped that the impersonal technique employed in these works made with paper-cutters, together with the geometric rigour of presentation, would help to transcend human imperfections and in so doing 'cure' people of the frenzy of the period. In common with other Dadaists, such as Kurt Schwitters in the pictures and reliefs he called *Merzbilder*, from 1916 to 1919 Arp also produced more random arrangements that championed chance as the governing factor.

Artists working in France in the 1920s, such as Joan Miró and André Masson, came under the influence of Surrealism (and in particular its elevation of irrational forces) and began to explore 'pure psychic automatism', as defined in André Breton's *Manifeste du surréalisme* (Paris, 1924), employing such techniques as psychic improvisation, Biomorphism and Automatism. Conceiving of their pictures as reflections of the workings of the subconscious mind, in works such as Miró's *Birth of the World* (1925; New York, MOMA) they created a form of improvised abstract painting that anticipated the gestural aspects of Abstract Expressionism referred to as action painting.

4. Concrete art and geometric abstraction, 1930–45.

The ideological opposition to abstract art that developed in Germany and the USSR led many abstract artists to gravitate to Paris, which gradually became the most important centre for abstract art, despite the antipathy of the French art establishment to its stricter forms. Even before Kandinsky's arrival in 1933, a great range of Europeans had already established themselves in and around Paris, including the Russians Lissitzky, Gabo, Antoine Pevsner and Jean Pougny; Dutch artists associated with De Stijl, such as Mondrian, van Doesburg (who died in 1931), Georges Vantongerloo and César Domela; Hans Arp and Sophie Taeuber-Arp; the Poles Henryk Stażewski, Władysław Strzemiński and Katarzyna Kobro; and the Italian Enrico Prampolini. Most of these artists were among those who formed the nucleus of new groups and periodicals established in Paris during the 1930s to promote abstract art. Taeuber-Arp's *Composition with Rectangles and Circles on Black Ground* (1931; Basle, Kstmus.; see fig. 2) was typical of the geometric rigour of their work. One of the most important sculptors working in Paris during this period was Constantin Brancusi, who favoured forms of extreme simplicity abstracted from nature; although he was not identified with any movement, he had a lasting influence on the development of abstract sculpture well into the 20th century.

Arguments for the total autonomy of abstract art, which had gathered momentum during the 1920s, were vehemently expressed in a manifesto formulated by van Doesburg and published in April 1930 in the only issue of a new periodical based in Paris, *Art concret*. In it van Doesburg argued that a picture should be 'constructed entirely from purely plastic elements, that is to say planes and colours' and that as 'a pictorial element has no other significance than itself' the picture as a whole similarly has 'no other significance than itself'. This formalist emphasis reflected van Doesburg's familiarity with Constructivist tenets during the 1920s and illustrates the extent to which he had departed from Mondrian's mystical justifications. This rationale for Concrete art quickly gained followers, who used the term in preference to abstract because they agreed with van Doesburg that 'nothing is more real than a line, a colour, a surface'. Jean Hélion, who also signed the manifesto, sought in his *Equilibrium* series (1932–4) to express the effects of space and movement on geometric elements, while during the same decade Domela and Vantongerloo developed an impersonal, severe, mathematically based art; Arp, Strzeminski, Kobro and Max Bill were among those who proposed their own interpretations of Concrete art at this time, with Bill popularizing the concept in Switzerland and South America.

More catholic tendencies were embraced in the 1930s by an association based in Paris, [Abstraction–création], which promoted its ideas through a magazine of the same name, and by another group and periodical, [Cercle et carré], which flourished only briefly. The very diversity of Abstraction–Création, however—its members included Arp, Delaunay, Albert Gleizes, Hélion, Auguste Herbin, Kupka, van Doesburg and Vantongerloo—was also its weakness. Disagreements arose over exhibition policy: the dominant faction supported only 'pure' abstraction and would accept no painting containing any suggestion of an outside reference; those who resisted were eventually compelled to resign over what they considered an excessively rigid approach. Debates also raged in their magazine over how abstract art could best serve society in the face of political events abroad. Some left-wing contributors argued that abstract art was too remote from the general population to succeed in such aims, while others argued for aesthetic freedom on the basis that the objective of Communism was to liberate the individual. If the two sides of the argument seemed irreconcilable, the editorial stance of the magazine at least promoted the view that commitment to abstract art represented independence and opposition to totalitarianism.

With the increasing threat of war in Europe, many European artists were forced to uproot themselves again. Towards the end of the 1930s England was perceived as a safer refuge. For a brief period after the arrival of Walter Gropius, Marcel Breuer, Moholy-Nagy, Gabo and Mondrian, the north London suburb of Hampstead and St Ives in Cornwall became centres of abstract and especially Constructivist art; English artists such as Ben Nicholson and Barbara Hepworth moved in their own work towards a greater degree of abstraction, while the cause of international abstract art was publicized through the touring exhibition *Abstract and Concrete Art* in 1936 and through the publication in 1937 of the collection of essays *Circle: International Survey of Constructive Art*. However, the British public showed little interest in abstract art, and with the outbreak of World War II many of the Europeans decided in any case to leave for the USA, where they continued to encourage the development of abstract art.

. Abstract Expressionism, Art informel and related tendencies, mid- to late 1940s and 1950s.

After World War II the geometric abstraction of artists such as Albers, Arp and Bill was shown widely in Europe, notably at the exhibition *Art concret* in 1945 (Paris, Gal. Denise René), organized with the help of Theo van Doesburg's widow, Nelly van Doesburg, and at the Salon des Réalités Nouvelles, which over the following ten years became the largest exhibiting forum in Paris. After the traumas of World War II, however, many other artists found the geometric order too limiting to reflect their particular psychological experiences; in their search for a more immediate expression, they turned to a looser and often more gestural form of abstract painting. Inspired partly by influential exhibitions at the Galerie René Drouin and the work of Jean Fautrier, Jean Dubuffet and Wols, the painting that resulted was exhibited and promoted in Paris under a plethora of names, including lyrical abstraction, [Art informel], [Matter painting] and [Tachism]. Expressive abstraction soon became an international phenomenon, encompassing [Zen] 49 (founded 1949) and [Quadriga] (founded 1952) in Germany, the painters associated with [Cobra] (1948–51) and a group of younger English painters based primarily in [St ives], such as Patrick Heron and Peter Lanyon, while related developments also took place in Italy, Spain, South America and in Japan with the [Gutai] group. In the USA a separate but related phenomenon, [Abstract expressionism], flourished at this time.

These groups shared several characteristics: an emphasis on impulsiveness and spontaneity that rejected predetermined composition and that frequently equated drawing with painting; a concentration on the individual mark or 'tache', as opposed to the straight line or carefully circumscribed shape; a concern for the expressive potential of paint and its textured or optical effect; and a sense of immediacy in the execution. Qualities of freshness and urgency led to a physical awareness of the artist's contact with the picture surface and of the act of painting itself, manifested in the USA by Action painting.

In spite of the common features, there were significant differences among the various post-war groups and problems even in naming them. For example the terms *Art informel* and Tachism are often used interchangeably, even though the painters associated with *Art informel*, such as Jean Fautrier, Jean-Paul Riopelle, Antoni Tàpies and Jean Dubuffet (who approached abstraction in his *Texturologies*), generally preferred to use thick accretions of layers of paint, hence the term matter painting (for illustration *see* Tàpies, antoni); whereas the Tachists, such as Georges Mathieu (who coined the word), Hans Hartung and Henri Michaux, concentrated on the swift execution of the painted stroke or gesture. The degree or type of abstraction varied from group to group. Artists associated with St Ives, such as Lanyon and Terry Frost, produced atmospheric abstractions of the Cornish landscape, whereas many of the Cobra artists tended to create hybrid forms reminiscent of the mythological animals they admired in Nordic art and legend. Even within groups, the degree of abstraction was seldom clearcut, depending more on the individual proclivities of each artist. During this period, especially in Paris, tendencies were often named and promoted by critics and writers rather than by the artists themselves, thus helping to disseminate the work but also bracketing tendencies into a rather amorphous, international expansion of *Art informel* and Tachism from around 1956.

Confusion also arises from the application of the term Abstract Expressionism to American artists, as it has been used to encompass both the gestural action painting of artists such as Jackson Pollock, Willem de Kooning and Franz Kline and the Colour field painting of Mark Rothko, Barnett Newman and Ad Reinhardt; it is also used to describe paintings by artists who do not fit strictly into either category, such as Clyfford Still, Robert Motherwell and Hans Hofmann, or those whose work contains residual figuration, such as Adolph Gottlieb, William Baziotes and Arshile Gorky. Given this disparity, some critics and historians have preferred to refer to the New York school (as in the title of a major exhibition at Los Angeles, CA, Co. Mus. A., 1965), in response to the term Ecole de Paris, and to the role played by these American artists in transferring the centre of power from Paris to New York; even this term, however, is not wholly accurate, since most of the major painters originated from outside New York and in many cases continued to work in other places. Whatever name is given to these developments, the fact remains that they emerged not only as a reaction against dominant trends of realism within American painting but also from a knowledge and assimilation of European models, particularly Cubism and the Surrealist technique of automatism, and (in the case of Pollock and others) from Native American and Mexican art. The psychoanalytic theories of Sigmund Freud and Carl Gustav Jung provided an intellectual context for their search for a new subject-matter underpinning the raw and impressive physical presence of their paintings (*see* Psychoanalysis and art).

While the Abstract Expressionists made reference to shared influences and intentions, great formal differences nevertheless underlie such works as Pollock's *Autumn Rhythm* (1950; New York, Met.) and Newman's *Vir heroicus sublimis* (1950–51; New York, MOMA). Pollock placed his unstretched canvas on the floor and literally poured paint on to the surface to produce weaving, linear arabesques that create an 'all-over' effect. Newman and other artists associated with colour field painting, on the other hand, evenly covered the canvas with a flat application of paint so that the viewer's field of vision is saturated with colour; no allowance is made for individual 'gesture' within this unmodulated surface. Like the Surrealists, Pollock believed that the basic artistic impulse was grounded in the unconscious, and it was this concept, interpreted in Existentialist terms, that led the critic Harold Rosenberg to devise his definition of action painting. For Newman, as for Rothko, painting was a means of expressing the sublime, of creating a transcendent art that had its origins in Old Testament theology. Thus Rothko's zones of colour were conceived not as decoration but as a means of effecting a revelatory and emotional experience for the spectator. Such levels of meaning, however, were not taken into account by formalist criticism, especially as promoted by Clement Greenberg, who vaunted the new painting for its supercession of Cubist space. Abstract Expressionism came to be seen as essentially different from European painting because of its vitality, use of large scale, intense physicality and holistic quality, by which the entire picture surface pre-empted its segmentation into parts. A case was soon made by American critics for the superiority of this art, which was promoted internationally through exhibitions and publications in such a way that New York came to be generally recognized as the most important centre of artistic production after World War II.

Jackson Pollock

1. Life and work.

He was the youngest of five sons and in his first 16 years moved 9 times with his family between California and Arizona. In 1928 he settled in Los Angeles, where he studied at the Manual Arts High School under the painter and illustrator Frederick John de St Vrain Schwankowsky. He learnt the rudiments of art and learnt about European and Mexican modernism. His teacher introduced him to the doctrines of Theosophy and of its former messiah, Jiddu Krishnamurti, which prepared Pollock, who had been brought up as an agnostic, to be open to contemporary spiritual concepts: the unconscious, Carl Gustav Jung's analytical psychology and Surrealist automatism.

Like his brother Charles, who had left home in 1922 to study art, Pollock went to New York in 1930. He studied at the Art Students League with the Regionalist mural painter Thomas Hart Benton. He lived in poverty from 1933 until 1935, when he worked as a mural assistant and later easel painter on the Works Progress Administration's Federal Art Project (WPA/FAP). This provided a subsistence wage and the opportunity to experiment until 1943. During the Depression he often depended on his brothers, living in Greenwich Village first with Charles and then from 1934 to 1942 with his brother Sanford. In 1936 he joined David Alfaro Siqueiros's Experimental Workshop and observed the aleatoric application of industrial enamels such as duco, which he later used in his poured paintings.

Pollock's work before 1938 displays the influence of Benton, Albert Pinkham Ryder and the Mexicans Siqueiros and José Clemente Orozco. The painting *Going West* (1934–5; Washington, DC, N. Mus. Amer. A.) is typical of this period. Set in a nocturnal landscape where the dynamic compositional vortex is a synthesis of Ryder's atmospheres and Benton's terrains, mules draw two wagons along a road in front of a rickety-looking general store. A full moon dominates the sky, the brightest portion of which reads as a human profile looking toward the lone muleteer. This small painting contains many of the characteristics of Pollock's later Abstract Expressionist style and symbolism (*see* [Abstract expressionism](#)): a vital linearity; emphasis on the four-footed animal, which appears throughout his work; dependence on motifs drawn from his personal history—here the team and wagons can be found in a family photograph of Cody—and the image of the Moon-woman, a theme of many subsequent works.

In 1938 Pollock spent four months in hospital undergoing psychiatric treatment for his alcoholism, which had begun in his adolescence. As a result he worked with two Jungian analysts, who used his drawings in the therapeutic process until 1941. This resulted in an obsessive exploration of his unconscious symbolism, mediated through the stylistic influence of Picasso, Orozco, Joan Miró and the theories of John Graham. The works he created parallel to his psychotherapy contain the elements of what became a personal iconography. A key painting in the Jungian process, *Male and Female* (*c.* 1942, Philadelphia, PA, Mus. A.; see fig. 1), reveals the central conflict of Pollock's personality at this time. To the left, a weak male figure with a bestial face below its breast, its eyes inverted and with a phallic snake curled between its legs, stands before a tower that erupts with freely poured pigment (the first appearance of this technique in Pollock's work). Confronting the male is a female totemic figure consisting of a dominant column of mathematical calculations, a baleful maw and sensuous pink breasts and belly below. In 1942 the painter Lee Krasner moved into Pollock's studio and they married in 1945.

When the WPA ended in 1943 Pollock's first one-man exhibition was held at Peggy Guggenheim's Art of this Century Gallery, New York, and was followed by exhibitions there nearly every year until 1947. Between 1944 and 1945 he made engraving experiments at Atelier 17 under Stanley William Hayter's supervision. Few of these were titled and their style was abstract, but the experience greatly influenced the linear quality of his mature painting style (see O'Connor and Thaw, iv, pp. 142–52). By 1948 Pollock had achieved a certain notoriety with the critics. His style evolved from the idiosyncratic surrealism of *Male and Female* and *Moon-woman Cuts the Circle* (*c.* 1943; Paris, Pompidou), through the revisionist cubistic facture of *Gothic* (1944; New York, MOMA) and *Totem Lesson 1* (1944; Atherton, CA, Harry W. Anderson priv. col.) and the lyrical colour of *Water Bull* (*c.* 1946; Amsterdam, Stedel. Mus.), to the densely painted *Eyes in the Heat* (1946; Venice, Guggenheim) and to the first major poured paintings of 1947. The stylistic turning-point coincided chronologically with his marriage and move to East Hampton late in 1945. The rural setting enabled a more direct observation of nature, bringing a new freedom and vitality to his method of working while 'veiling the image', which had previously dominated his work.

From 1947 to 1952 Pollock created his most famous poured paintings, which he gave numbers rather than titles to avoid distracting the viewer with associations extraneous to the work. These works were also larger in scale. By 1950 he had painted such works as *One: Number 31, 1950* (2.69x5.3 m; New York, MOMA) and *Number 32, 1950* (Düsseldorf, Kstsamml. Nordrhein-Westfalen). During these years of intense creativity he was treated by a doctor who allayed his drinking with tranquillizers, but he began to drink heavily again in 1951. From this date Pollock painted in black on unprimed canvas, returning to his earlier symbolic imagery. *Number 23, 1951/'Frogman'* (1.05×1.42 m; Norfolk, VA, Chrysler Mus.), for instance, echoes a motif that can be traced to the drawings used in his Jungian therapy.

By late 1952 Pollock was searching for new breakthroughs, *Convergence: Number 10, 1952* (3.96×2.37 m; Buffalo, NY, Albright-Knox A.G.) and *Blue Poles: Number 11, 1952* (4.87×2.1 m; Canberra, N.G.) being the results of this effort. His work of 1953, such as *Portrait and a Dream* (Dallas, TX, Mus. F.A.; see fig. 2) and *Ocean Greyness* (1.46×2.29 m; New York, Guggenheim) recapitulated earlier styles and motifs with new power. The former contrasts a black pouring, which contains a portrait of his wife as Moon-woman, with a flamboyant self-portrait; the latter returns to the grey masking first used in *She-wolf* (1.7×1.06 m; 1943; New York, MOMA).

Pollock's health, however, began to fail. Although he created a few strong paintings and drawings he was, by his last years, physically and mentally debilitated, unable to endure the pressures of life or the demands of an art world that claimed him as a leader, while he felt, with more or less justification, that it misunderstood and undervalued his achievements. During the summer of 1956 he was killed in a car accident.

2. Working methods and technique.

Pollock is most famous for his pouring technique and for painting his large canvases on the floor using heavily loaded brushes, sticks and turkey-basters to disperse the paint. Analysis of *Number 2, 1949* (9.68×4.81 m; Utica, NY, Munson-Williams-Proctor Inst.; *see* Abstract expressionism, fig. 1) will clarify his methods. The

surface consists of poured lines and small drops of paint on commercially dyed dark red fabric. The sequence of colours is as follows: thin grey and white lines, a row of bold black curves, an overall intertwining of white and finally delicate pourings and touches of yellow, silver, scarlet and Indian red. Oil from the larger concentrations of black and white paint bled into the porous fabric, creating shadow-like areas of a darker red. Pollock exploited this by carefully placing drops of Indian red paint, the same colour as the fabric, within these darker areas, creating a repoussoir effect that gives a lively dimensionality to what would otherwise have appeared a drab mistake. Pollock was not arbitrarily 'dripping' paint but was concerned about, and carefully controlling, his painterly effects, despite the implications of the idea of Action painting. The first elements of the curvilinear design can be traced on the reverse of *Number 2, 1949* because it is painted on fabric rather than canvas. Elements that soaked through appear there as if white were under black but appear on the front with the white on top, showing that Pollock filled in parts of the white lines so the overall aesthetic balance of lights and darks would, as he liked to say, 'work'.

The vertical black elements of the composition all feel as if the hand had applied them from left to right. Looking at the predominant white elements, a certain tension is discernible. The problem posed by visual instinct is solved by recognizing that the whites were mostly set down from the other edge of the canvas. For Pollock, painting on the floor like a North American Indian sand painter, it was a matter of working along both of its long sides. When the painting is reversed it is apparent that the whites flow as freely and logically as the blacks. One of the hallmarks of most of Pollock's large-scale work is that the major design elements flow from left to right, as if written out. The left edge of the work, whichever side Pollock is working from, always begins with an elegant pirouette of paint, which then dances across the length of the canvas, until it reaches the terminal right edge, where a suddenly stymied form signifies the artist's frustration that subjective infinity is limited by the objective length of his ground. In the case of *Number 2, 1949*, after thinking through the overall coherence of its composition from both sides, Pollock felt it 'worked' better if the tension in the whites was retained against the freer blacks underneath. This was typical of his way of thinking, akin to the wildness of nature.

The unusual shape of the work, about five times as wide as it is high, served his tendency to 'write out' his paintings. Pollock was also very interested during these years in painting murals, which he did not do on the WPA/FAP. The row of vertical black curves across the length of the work echoes Benton's theories of mural design. He taught artists to organize a wall with a series of verticals around which more free-flowing forms could be arranged. Pollock often used this device in his work, notably in *Blue Poles*, and he used it in *Number 2, 1949*, countering the whites around the black uprights in a way that sets the rhythms of his oblong frieze. This shape may go even deeper into Pollock's experience. A family photograph of the dining-room at Cody in 1912, from the same group of photographs that had influenced *Going West*, showed oblong oleolithographs of flowers on the wall, the exact shape and overall look of many of his most striking poured paintings.

The details of Pollock's style and facture, whether in major canvases or in his drawings and mixed-media works, all seem to derive from limitations of education and experience. In many ways his work was a closed system that re-assimilated itself until its energy dissipated. Yet his paintings and personality have entered modern mythology by virtue of a heroism of character that transcends both tradition and tragedy.

BIBLIOGRAPHY

F. O'Hara: *Jackson Pollock* (New York, 1959)

B. Robertson: *Jackson Pollock* (New York, 1960) [excellent pls]

W. Rubin: 'Jackson Pollock and the Modern Tradition', *Artforum*, v (1967), no. 2, pp. 14–22; no. 3, pp. 28–37; no. 4, pp. 18–31; no. 5, pp. 28–33

F. V. O'Connor: 'The Genesis of Jackson Pollock: 1912–1943', *Artforum*, v/5 (1967), pp. 16–23

Jackson Pollock (exh. cat. by F. V. O'Connor, New York, MOMA, 1967)

C. L. Wysuph: *Jackson Pollock: Psychoanalytical Drawings* (New York, 1970)

B. H. Friedman: *Jackson Pollock: Energy Made Visible* (New York, 1972)

F. V. O'Connor and E. V. Thaw, eds: *Jackson Pollock: A Catalogue Raisonné of Paintings, Drawings and Other Works*, 4 vols (New Haven, 1978)

A. Mag., 53 (1979) [issue devoted to Pollock]

W. Rubin: 'Pollock as Jungian Illustrator: The Limits of Psychological Criticism', *A. Amer.*, lxvii (1979), no. 7, pp. 104–23; no. 8, pp. 72–91 [responses in lxviii/8 (1980)]

Jackson Pollock: The Black Pourings, 1951–1953 (exh. cat. by F. V. O'Connor, Boston, MA, ICA, 1980)

Jackson Pollock: Drawings into Paintings (exh. cat. by B. Rose, New York, MOMA, 1980)

Jackson Pollock (exh. cat. by D. Bozo and others, Paris, Pompidou, 1982) [excellent colour pls]

E. Frank: *Jackson Pollock* (New York, 1983) [summary of critical theories about Pollock]

J. Potter: *To a Violent Grave: An Oral Biography of Jackson Pollock* (New York, 1985)

FRANCIS V. O'CONNOR

APOLLINAIRE

Guillaume Apollinaire (1880-1918) whose real name was Wilhelm Apollinaris de Kostrowitzki, was born in Rome of halo-Polish extraction. His talent and his artistic activities (he earned his living for a while by preparing new editions of old French pornographic classics) mirrored a complex ancestry and a somewhat unusual education. Close to the poets and painters of the early Cubist movement, himself a poet of great originality and some distinction, he set out to introduce Cubism to the public in terms that the public, even if it should depart from the usual steadfast indifference toward marginal artistic activities, would hardly understand or appreciate; but he has left us an excellent statement of the aims and attitudes of his friends. As a banker commented who was being shown over the New York Armory show of 1913: "Something is wrong with the world. These men know:"

Wounded in the war, his health and to some extent also his mind impaired, Apollinaire succumbed to the influenza epidemic that swept Europe in 1918; but before he died he had joined Dada in 1917 and, perhaps, invented Surrealism. Certainly, with its mixture of erudition and dreamlike lyricism, his poetry provided an important bridge between Symbolism and Surrealism, a bridge that many of his contemporaries utilized.

On Painting

The plastic virtues: purity, unity, and truth, keep nature in subjection.

The rainbow is bent, the seasons quiver, the crowds push on to death, science undoes and remakes what already exists, whole worlds disappear for ever from our understanding, our mobile images repeat themselves, or revive their vagueness, and the colors, the odours, and the sounds to which we are sensitive astonish us, then disappear from nature-all to no purpose.

This monster beauty is not eternal.

We know that our breath has had no beginning and will never cease, but our first conceptions are of the creation and the end of the world.

However too many painters still adore plants, stones, the sea, or men.

We quickly get used to the bondage of the mysterious. And servitude ends by creating real delights.

Workers are allowed to control the universe, yet gardeners have even less respect for nature than have artists.

The time has come for us to be the masters. And good will is not enough to make victory certain.

On this side of eternity dance the mortal forms of love, whose accursed discipline is summed up by the name "nature."

Flame is the symbol of painting, and the three plastic virtues burn with `. radiance.

Flame has a purity which tolerates nothing alien and cruelly transforms in its image whatever it touches.

Flame has a magical unity; if it is divided, each fork will be like the single flame.

Finally it has the sublime and incontestable truth of its own light.

Good western painters of this period hold to their purity without regard to natural forces.

Purity is a forgetting after study. And for a single pure artist to die, it t would be necessary for all pure artists of past ages to have never existed.

Painting purifies itself in Europe with the ideal logic which the older painters handed on to the new ones, as if giving them life.

And that is all.

This painter finds pleasure, that one pain; one squanders his inheritance, another becomes rich, and still others have nothing but life.

And that is all.

You cannot carry around on your back the corpse of your father. You leave him with the other dead. You remember him, miss him, speak of him with', admiration. And if you become a father yourself, you cannot expect one of 'h your children to be willing to split in two for the sake of your corpse.

But in vain do our feet relinquish the soil which holds the dead.

To insist on purity is to baptize instinct, to humanize art, and to deify per-. sonality.

The root, the stem and the flower of the lily, instance the development of purity to its symbolical blossoming.

All bodies stand equal before light, and their modifications are determined by this dazzling power which moulds them according to its will.

We do not know all the colors. Each of us invents new ones.

But above all, the painter must contemplate his own divinity, and the pictures which he offers to the admiration of men will confer upon them, likewise, the glory of exercising their divinity-if only for a moment. To achieve this, it is necessary to encompass in one glance the past, the present, and the future.

The canvas should present that essential unity which alone can elicit ecstasy.

Then nothing unstable will send us off half-cocked. We will not be suddenly turning back. Free spectators, we will not sacrifice our life to our curiosity. The smugglers of appearances will not be able to get their contraband past the salt statues before our customs-house of reason.

We will not go astray in the unknown future, which, severed from eternity, is but a word fated to tempt man.

We will not waste our strength on the too-fugitive present; the fashionable, for the artist, can only be the mask of death.

The picture will exist ineluctably. The vision will be entire, complete, and its infinity, instead of indicating some imperfection, will simply express the relation between a newly created thing and a new creator, nothing more. Otherwise there would be no unity, and the connection which the different points of the canvas have with various dispositions, objects, and lights, would reveal only an assemblage of odds and ends, lacking all harmony.

For while an infinite number of creatures, each testifying to its creator, can exist without any one creation encroaching on the space of the others, yet it is impossible to conceive them all at once, and death results from their juxtaposition, their union, their love.

Each god creates in his own image, and so do painters. Only photographers manufacture duplicates of nature.

Neither purity nor unity counts without truth, which cannot be compared to reality, since it is always the same, subsisting beyond the scope of nature, which strives to imprison us in that fatal order of things limiting us to the nearly animal.

Artists are above all men who want to become inhuman.

Painfully they search for traces of inhumanity, traces which are to be found nowhere in nature.

These traces are clues to truth, aside from which there is no reality we can know.

But reality will never be discovered once and for all. Truth is always new. Otherwise truth would be a system even more wretched than nature itself.

But such pitiful truths, more distant, less distinct, less real each day, would reduce painting to a sort of plastic writing, intended simply to facilitate communication between people of the same race.

In our times, a machine to reproduce such signs would be quickly invented.

Many new painters limit themselves to pictures which have no real subjects. And the titles which we find in the catalog are like proper names, which designate men without characterizing them.

There are men named Stout who are in fact quite thin, and others named White who are very dark; well now, I have seen pictures entitled Solitude containing many human figures.

In the cases in question, the artists even condescend at times to use vaguely explanatory words such as Portrait, Landscape, and Still-life; however, many young painters use as a title only the very general term Painting.

These painters, while they still look at nature, no longer imitate it, and carefully avoid any representation of natural scenes which they may have observed, and then reconstructed from preliminary studies.

Real resemblance no longer has any importance, since everything is sacrificed by the artist to truth, to the necessities of a higher nature whose existence he assumes but does not lay bare. The subject has little or no importance.'; more.

Generally speaking, modern art repudiates most of the techniques of pleasing devised by the great artists of the past. ; .j

While the goal of painting is today, as always, the pleasure of the eye, the art-lover is henceforth asked to expect delights other than those which looking at natural objects can easily provide.

Thus we are moving towards an entirely new art which will stand, with respect to painting as envisaged heretofore, as music stands to literature.

It will be pure painting, just as music is pure literature.

The music-lover experiences, in listening to a concert, a joy of a different order from the joy given by natural sounds, such as the murmur of the brook, uproar of a torrent, the whistling of the wind in a forest; or the h monies of human speech based on reason rather than on esthetics.

In the same way, the new painters will provide their admirers with artist sensations by concentrating exclusively on the problem of creating harmony with unequal lights.

Everybody knows the story told by Pliny about Apelles and Protogenes...l clearly illustrates the esthetic pleasure resulting solely from the contradictory harmonies referred to above.

Apelles landed, one day, on the isle of. Rhodes, and went to see the work . of Protogenes who lived there. Protogenes was not in the studio when Ape , arrived. An old woman was there; looking after the large canvas which

painter had prepared. Instead of leaving his name, Apelles drew on canvas a line so subtle that nothing happier could be conceived.

Returning, Protogenes saw the line, recognized the hand of Apelles, a drew on the litter's line another line of another color, one even more sub so that it seemed as if there were three lines.

Apelles came back the next day, and again did not find his man; subtlety of the line which he drew this time caused Protogenes to despair The sketch aroused for many years the admiration of connoisseurs, who co ntemplated it with as much pleasure as if it had depicted gads and goddesses instead of-almost invisible lines.

The secret aim of the young painters of the extremist schools is to produce pure painting. Theirs is an entirely new plastic art. It is still in its beginning and is not yet as abstract as it would like to be. Most of the new painter depend a good deal on mathematics, without knowing it; but they have no yet abandoned nature, which they still question patiently, hoping to learn they right answers to the questions raised by life.

A man like Picasso studies an object as a surgeon dissects a cadaver. -1

This art of pure painting, if it succeeds in freeing itself from the art of the past, will not necessarily cause the latter to disappear; the development

Of music has not brought in its train the abandonment of various genres of literature, nor has the acridity of tobacco replaced the savoriness of food.

The new artists have been violently attacked for their preoccupation with geometry. Yet geometrical figures are the essence of drawing. Geometry, the science of space, its dimensions and relations, has always determined the norms and rules of painting.

Until now, the three dimensions of Euclid's geometry were sufficient to the restiveness felt by great artists yearning for the infinite.

The new painters do not propose, any more than did their predecessors, to be geometer. But it may be said that geometry is to the plastic arts what grammar is to the art of the writer. Today, scientists no longer limit themselves to the three dimensions of Euclid. The painters have been led, quite naturally, one might say by intuition, to preoccupy themselves, with the new possibilities of spatial measurements which, in the language of the modern studios, are designed by the term: the fourth dimension.

Regarded from the plastic point of view, the fourth dimension appears to spring from the three known dimensions: it represents the immensity of space, eternalizing itself in all dimensions at any given moment. It is space itself, the dimension of the infinite; the fourth dimension endows objects with plasticity. It gives the object its right proportions on the whole, whereas in Greek art for instance, a somewhat mechanical rhythm constantly destroys the proportions.

Greek art had a purely human conception of beauty. It took man as a measure of perfection. But the art of the new painters takes the infinite universe as its ideal, and it is to this ideal that we owe a new norm of the perfect, one which permits the painter to proportion objects in accordance with the degree of plasticity he desires them to have.

Nietzsche divined the possibility of such an art:

"Oh divine Dionysius, why pull my ears?" Ariadne asks her philosophical lover in one of the celebrated dialogues on the isle of Naxos. "I find something pleasant and delightful in your ears, Ariadne; why are they not even longer ? "

Nietzsche, in relating this anecdote, puts into the mouth of Dionysius an implied condemnation of all Greek art.

Finally, I must point out that the fourth dimension-this utopian expression should be analysed and explained so that nothing more than historical interest may be attached to it-has come to

stand for the aspirations and premonitions of the many young artists who contemplate Egyptian, Negro, and Oceanic sculptures, meditate on various scientific works, and live in the anticipation of a sublime art.

Wishing to attain the proportions of the ideal, to be no longer limited to the human, the young painters offer us works which are more cerebral than sensual. They discard more and more the old art of optical illusion and local proportion in order to express the grandeur of metaphysical forms. This is why contemporary art, even if it does not directly stem from specific religious beliefs, nonetheless possesses some of the characteristics of great, that is to say, religious art.

It is the social function of great poets and artists to renew continually the appearance nature has for the eyes of man.

Without poets, without artists, men would soon weary of nature's monotony. The sublime idea men have of the universe would collapse with dizzying speed. The order which we find in nature, and which is only an effect of art, would at once vanish. Everything would break up in chaos. There would be no seasons, no civilization, no thought, no humanity; even life would give way, and the impotent void would reign everywhere.

Poets and artists plot the characteristics of their epoch, and the future docilely falls in with their desires.

The general form of an Egyptian mummy is in conformity with the figures drawn by Egyptian artists, and yet the ancient Egyptians were far from being all alike. They simply conformed to the art of their time.

To create the illusion of the typical is the social role and peculiar end of art. God knows how the pictures of Monet and Renoir were abused! Very well! But one has only to glance at some photographs of the period to see how closely people and things conformed to the pictures of them by these great: painters.

Since of all the plastic products of an epoch, works of art have the most energy, this illusion seems to me quite natural. The energy of art imposes itself on men, and becomes for them the plastic standard of the period. Thus,"-` those who mock the new painters are actually laughing at their own features,' for people in the future will portray the men of today to be as they are repres ented in the most alive, which is to say, the newest art of our time. And do not tell me there are today various other schools of painting in whose images humanity will be able to recognize itself. All the art works of an epoch end by resembling the most energetic, the most expressive, and the most typical works of the period. Dolls belong to popular art; yet they always seem to be: inspired by the great art of the same epoch. This is a truth which can easily. be verified. Yet who would dare to say that the dolls which were sold at bar= gain counters, around 1800, were shaped by a sentiment akin to what Renoir felt when he painted his portraits? No one perceived the relationship then But this only means that Renoir's art was sufficiently energetic to take hold of our senses, even though to the general public of the epoch in which he made his debut his conceptions seemed absurd and foolish.

There has been a certain amount of suspicion, notably in the case of the most recent painters, of some collective hoax or error.

But in all the history of art there is not a single instance of such general collaboration in artistic fraud or error. There are, indeed, isolated cases of mystification and blundering. But the conventional elements of which works of art are to a great extent composed guarantee the impossibility of such instances becoming general.

If the new school of painting were indeed an exception to this rule, it would be so extraordinary as to verge on the miraculous. As readily imagine all the children of a country born without heads, legs, or arms, an obvious absurdity. There are no collective errors or hoaxes in art; there are only various epochs and dissimilar schools. Even if the aims pursued by these schools are not all equally elevated or equally pure, all are equally respectable, and, according to the ideas one has of beauty, each artistic school is successively admired, despised, and admired once more.

The new school of painting is known as cubism, a name first applied to it in the fall of 1908 in a spirit of derision by Henri Matisse, who had just seen a picture of some houses whose cube-like appearance had greatly struck him,

The new esthetics was first elaborated in the mind of Andre Derain, but the most important and audacious works the movement at once produced were those of a great artist, Pablo Picasso, who must also be considered one of the founders: his inventions, corroborated by the good sense of George Braque, who exhibited a cubist picture at the Salon des Independants as early as 1908 were envisaged in the study of Jean Metzinger, who exhibited the first cubist portrait (a portrait of myself)

at the Salon des Independants in 1910 and who in the same year managed to induce the jury of the Salon d'Automne to admit some cubist paintings. It was also in 1910 that pictures by Robert Delaunay, Marie Laurencin and Le Fauconriier, who all belonged to the same school, were exhibited at the Independants.

The first group exhibition of the cubists, who were becoming more numerous, took place in 1911 at the Independants. Room 41, which was devoted to their works, made a deep impression. There were the knowing and seductive works of Jean Metzinger; some landscapes, *Male Nude* and *Women with Phlox* by Albert Gleizes; *Portrait of Mme Fernande X* and *Young Girls* by Marie Laurencin; *The Tower*, by Robert Delaunay, *Abundance* by Le Fauconnier, and *Landscape with Nudes*, by Fernand Leger.

That same year the cubists made their first appearance outside France, in Brussels; and in the preface to the catalog of this exhibition, I accepted on behalf of the exhibitors the appellations: cubism and cubist.

Towards the end of 1911 the exhibition of the cubists at the Salon d'Automne made a considerable stir, and Gleizes (*The Hunt, Portrait of Jacques Nayral*), Metzinger (*Woman with Spoon*), and Fernand Leger, were ridiculed without mercy. A new painter, Marcel Duchamp, had joined the group, as had the sculptor-architect Duchamp-Villon.

Other group exhibitions were held in November, 1911 (at the Galerie d'Art Contemporain, rue Tronchet, Paris), and in 1912 (at the Salon des lndependants; this show was marked by the debut of Juan Gris); in May of the same year another cubist exhibition was held in Spain (Barcelona welcomed the young Frenchmen with enthusiasm); finally in June, at Rouen, an exhibition was organized by the Societe des Artistes Normands (important for presenting Francis Picabia, who had just joined the new school).

Cubism differs from the old schools of painting in that it aims, not at an art of imitation, but at an art of conception, which tends to rise to the height of creation.

In representing conceptualized reality or creative reality, the painter can give the effect of three dimensions. He can to a certain extent cube. But not by simply rendering reality as seen, unless he indulges in *trompe l'oeil*, in foreshortening, or in perspective, thus distorting the quality of the forms conceived or created.

I can discriminate four trends in cubism. Of these, two are pure, and along parallel lines.

Scientific cubism is one of the pure tendencies. It is the art of painting new structures out of elements borrowed not from the reality of sight, but from the reality of insight. All men have a sense of this interior reality. A man does not have to be cultivated in order to conceive, for example, of a round form.

The geometrical aspect which made such an impression on those who saw the first canvases of the scientific cubists, came from the fact that the essential reality was rendered with great purity, while visual accidents and anecdotes had been eliminated. The painters who follow this tendency are: Picasso, whose luminous art also belongs to the other pure tendency of cubism, Georges Braque, Albert Gleizes, Marie Laurencin, and Juan Gris.

Physical cubism is the art of painting new structures with elements borrowed, for the most part, from visual reality. This art, however, belongs in the cubist movement because of its constructive discipline. It has a great future as historical painting. Its social role is very clear. But it is not a pure art. It confuses what is properly the subject with images. The painter-physicist who created this trend is Le Fauconnier.

Orphic cubism is the other important trend of the new art school. It is the art of painting new structures out of elements which have not been borrowed from the visual sphere, but have been created entirely by the artist himself, and been endowed by him with fulness of reality. The work of the Orphic artist must simultaneously be a pure esthetic pleasure, a structure which is self-evident, and a sublime meaning, that is, a subject. This is pure art. The light in Picasso's paintings is based on this conception, to which Robert Delaunay's inventions have contributed much, and towards which Fernand Leger, Francis Picabia, and Marcel Duchamp are also addressing themselves

Instinctive cubism, the art of painting new structures of elements which are not borrowed from visual reality, but are suggested to the artist by In stinct and intuition, has long tended towards Orphism. The instinctive art lacks lucidity and an esthetic doctrine; instinctive cubism includes a far number of artists. Born of French Impressionism, this movement has now spread all over Europe.

Cezanne's last paintings and his water colors belong to cubism, but Court is the father of the new painters; and Andre' Derain, whom I propose to d cuss some other time, was the eldest of his beloved sons, for we find him the beginning of the fauvist movement, which was a kind of

introduction cubism, and also at the beginning of this great subjective movement; but would be too difficult today to write discerningly of a man who so wilful stands apart from everyone and everything.

The modern school of painting seems to me the most audacious that h ever appeared. It has posed the question of what is beautiful in itself.

It wants to visualize beauty disengaged from whatever charm man has f. men, and until now, no European artist has dared attempt this. The new artists demand an ideal beauty, which will be, not merely the proud expression of the species, but the expression of the universe, to the degree that it h. been humanized by light.

The new art clothes its creations with a grandiose and monumental appearance which surpasses anything else conceived by the artists of our time Ardent in its search for beauty, it is noble and energetic, and the reality brings us is marvellously clear. I love the art of today because above all el! I love the light, fur man loves light more than anything; it was he who invented fire.

Guillaume Apollinaire, Poems

Zone

You are tired at last of this old world
O shepherd Eiffel Tower the flock of bridges bleats at the morning
You have had enough of life in this Greek and Roman antiquity
Even the automobiles here seem to be ancient
Religion alone has remained entirely fresh religion
has remained simple like the hangars at the airfield . . .
This morning I saw a pretty street whose name I have forgotten
Shining and clean it was the sun's bugle
Executives and workers and lovely secretaries
From Monday morning to Saturday evening pass here four times a day
In the morning the siren wails three times
A surly bell barks around noon
Lettering on signs and walls
Announcements and billboards shriek like parrots
I love the charm of this industrial street . . .
Now you are on the shore of the Mediterranean
Under the lemon trees which blossom all year
With your friends you take a boat ride
You are in the garden of an inn on the outskirts of Prague
You feel completely happy a rose is on the table
And instead of writing your story in prose you watch
The rosebug which is sleeping in the heart of the rose . . .
Here you are in Marseilles amid the watermelons
Here you are in Coblenz at the Hotel of the Giant
Here you are in Rome sitting under a Japanese medlar tree . . .
You are alone the morning is almost here
The milkmen rattle their cans in the street
The night departs like a beautiful half-caste
False Ferdine or waiting Leah
And you drink this burning liquor like your life
Your life which you drink like an eau-de-vie
You walk toward Auteuil you want to walk home on foot
To sleep among your fetishes from Oceania and Guinea
They are all Christ in another form and of another faith
They are inferior Christs obscure hopes
Adieu adieu
The sun a severed neck

Vintage Month

. . . One night walking along dark deserted quays

25

On the way back to Auteuil I heard a voice
Which gravely sang with measured silences
So that the clear lament of other distant voices
Might reach the banks of the Seine.
I listened long to all those songs and cries
Which woke in the night the song which Paris sings
I am thirsty cities of France and of Europe and of the world
Come flow into the cavern of my throat.
These grapes which the sun begets from our senses
Sacrifice themselves to quench your thirst too eager a marvel
We bring you all intellects graveyards and walls
The cradles filled with cries you do not hear
And upstream and downstream the rivers of our thoughts
The ears of schools and our hands
Held like steeples with the fingers extended
And we shall also bring that supple reasoning
Which mystery can shut out like the door of a house
The courtly mystery of gallantry and that fatal fatal mystery of another life. . .
The entire universe concentrated in this wine
Which contained oceans animals plants
Cities destinies and stars which sing
Men on their knees on the bank of heaven
And docile iron our good companion
Fire which one must love as one loves oneself. . .
What Paris was thirsty for was presented to me then
Actions beautiful days terrible sleeps
Vegetations Couplings eternal music
Movements Adorations divine grief
Worlds which resemble eath other and resemble us
I have drunk you without quenching my thirst
But I have known since then the flavour of the universe
I am drunk from having swallowed all the universe
On the quay where I saw the darkness flowing and the barges sleeping
Listen to me I am the gullet of all Paris
And I shall drink the universe again if I want
Listen to my songs of universal drunkenness
And the September night drew slowly to a close
The red fires of the bridges dissolved in the Seine
The stars died and day was barely visible

War
The central combat sector
Contact by listening post
Or shoot in the direction of "audible noises"
The young men in the class of 1915
And these electrified wires
Yet don't cry about these horrors of war
Before it we only had the surface
Of the earth and of the sea
After it we shall have the depths
The underground and free space overhead
Men at the tiller
Afterwards afterwards
We shall have all the joys
Of conquerors who rest
Women Games Factories Commerce
Industry Agriculture Iron

Fire Crystal Speed
Voice Light Touch separately
And together in the touch of distant things
Of far greater distances
Beyond this earth even

The Pretty Read-Head

Behold me before all a man of good sense
Knowing life and of death what a living man can know
Having experienced the griefs and the joys of love
Having been able to assert his ideas on occasion. . .
Between us and for us my friends
I pronounce judgement on this long quarrel of tradition and innovation
Of Order and Adventure
You whose mouths are made in the image of God's
Mouths which are order itself
Be indulgent when you compare us
To those who have been the perfection of order
We who seek everywhere for adventure
We are not your enemies
We wish to offer you vast and strange domains
Where flowering mystery offers itself to whoever wishes to pick it
There are new fires there and colors never yet seen
A thousand imponderable phantasms
To which reality must be given
We would explore goodness a vast country where everything is silent
There is also time which one can banish or call back
Pity us who fight always in the front lines
Of the limitless and of the future
Pity our errors pity our sins. . .
But laugh laugh at me
Men from anywhere above all men of this place
For there are so many things I dare not tell you
So many things you will not let me say
Have pity on me

Background:

Magdalena Dabrowski, "Kandinsky: Compositions"

Kandinsky and Music

"The term "Composition" can imply a metaphor with music. Kandinsky was fascinated by music's emotional power. Because music expresses itself through sound and time, it allows the listener a freedom of imagination, interpretation, and emotional response that is not based on the literal or the descriptive, but rather on the abstract quality that painting, still dependent on representing the visible world, could not provide.

"Kandinsky's special understanding of the affinities between painting and music and his belief in the *Gesamtkunstwerk*, or the total work of art, came forth in his text "On Stage Composition," his play "Yellow Sound," and his portfolio of prose poems and prints *Klange* (*Sounds*, 1913). Music can respond and appeal directly to the artist's "internal element" and express spiritual values, thus for Kandinsky it is a more advanced art. In his writings Kandinsky emphasizes this superiority in advancing toward what he calls the epoch of the great spiritual.

"Wagner's *Lohengrin*, which had stirred Kandinsky to devote his life to art, had convinced him of the emotional powers of music. The performance conjured for him visions of a certain time in Moscow that he associated with specific colors and emotions. It inspired in him a sense of a fairy-tale hour of Moscow, which always remained the beloved city of his childhood. His recollection of the Wagner performance attests to how it had retrieved a vivid and complex network of emotions and memories from his past: "The violins, the deep tones of the basses, and especially the wind

instruments at that time embodied for me all the power of that pre-nocturnal hour. I saw all my colors in my mind; they stood before my eyes. Wild, almost crazy lines were sketched in front of me. I did not dare use the expression that Wagner had painted 'my hour' musically."

"It was at this special moment that Kandinsky realized the tremendous power that art could exert over the spectator and that painting could develop powers equivalent to those of music. He felt special attraction to Wagner, whose music was greatly admired by the [Symbolists](#) for its idea of *Gesamtkunstwerk* that embraced word, music, and the visual arts and was best embodied in Wagner's *The Ring of the Nibelung*, with its climax of global cataclysm. One can also presume that Kandinsky, philosophically a child of the German [Romantic](#) tradition, was strongly attracted to Wagner's use of medieval Germanic myths and legends, including those of the world's creation and destruction, as symbols that allowed for the translation of his philosophical attitudes toward the world view, religion, and love. For instance, Kandinsky was enthralled by *Tristan and Isolde* as an expression of undying love and spiritual transformation. But in Wagner there is also an affinity with the philosophy of Schopenhauer, who considered music to be of central importance in man's emotional life.

"Among his musical contemporaries, Kandinsky admired the work of Aleksander Scriabin, whose innovations he found compatible with his own objectives in painting. What especially intrigued Kandinsky were Scriabin's researches toward establishing a table of equivalencies between tones in color and music, a theory that Scriabin effectively applied in his orchestral work *Prometheus: A Poem of Fire* (1908). These tonal theories parallel Kandinsky's desire to find equivalencies between colors and feelings in painting: indeed, one of the illustrations included in the essay on Scriabin published in the Blaue Reiter Almanac was a color reproduction of *Composition IV*.

"Kandinsky's conviction that music is a superior art to painting due to its inherent abstract language came out forcefully in the artist's admiration for the music of the Viennese composer Arnold Schoenberg, with whom he initiated a longstanding friendship and correspondence and whose Theory of Harmony (1911) coincided with Kandinsky's On the Spiritual in Art. Kandinsky's complex relationship to Schoenberg's music is central to his concept of Composition, since Schoenberg's most important contribution to the development of music, after all, occurred in the area of composition.

"Schoenberg's innovations, such as discarding chromaticism and abandoning tonal and harmonic conventions, unleashed a new future for musical explorations and formed an important turning point for compositional practice. In particular, two of the composer's innovations radically opened musical compositional structures. Beginning with his First String Quartet in 1905, Schoenberg introduced a chromatic structure that he defined as a "developing variation," in which there was a continual evolution and transformation of the thematic substance of the musical piece, rejecting thematic repetition. This inspired the constant unfolding of an unbroken musical argument without recourse to the symmetrical balances of equal phrases or sections and their corresponding thematic content. As a result of this practice, Schoenberg achieved a musical continuum that was richly structured, densely polyphonic, and in which all parts were equally developmental.

"These new compositional structures led him toward free chromaticism, which emphasized nonharmonic tones and "emancipation of dissonance" (i.e., unresolved dissonance), one of the principal features of atonal music. Having such constant transformations, rather than the repetition of melodic pattern, endowed the work with a totally unconventional psychological depth, evocative power, and emotional strength. Schoenberg's innovations, which permitted any pitch configuration, ruptured traditional conventions of musical composition.

"The magnitude of this revolutionary change can be compared to the fundamental transformation in Kandinsky's painting from a figurative idiom to free, expressive, abstract work. The kinship between Kandinsky and Schoenberg (who was also influenced by the philosophy of Schopenhauer) is a special example of the intellectual affinity of artists in search of new vehicles for expressing their inner emotions. These diverse artistic and philosophical influences were all important for the conception of Kandinsky's first seven [Compositions](#) before World War I.

"Although Kandinsky created Composition I about a year before he became immersed in Schoenberg's new musical concepts, the objectives of his pictorial search seem nevertheless to coincide with those of the composer. As Schoenberg had done, Kandinsky searched for a free chromatic field, probably best exemplified in his Composition VII (1913), where richly structured, polyphonic motifs create spatial and compositional ambiguities, visual beauty, emotional impact, and intellectual stimulation. The elements "constructing" Kandinsky's Compositions that are at first glance abstract, such as in the three pre-war works, Compositions V, VI, and VII, could be compared to Schoenberg's use of unresolved dissonance: one dissonance, followed by another, and then the next, without completing the expectations of the musical destination. In Kandinsky's Compositions, numerous motifs-either abstracted from natural objects as in the first six works, or more purely abstract as in Composition VII-are organized into visual structures that can be experienced simultaneously, without expecting a resolution, and that can exert emotional impact on the viewer on several physical, psychological, and emotional levels.

"In his conclusion to On the Spiritual in Art, *Kandinsky again resorts to a musical metaphor to describe the deliberately cloaked pictorial construction of form and color. In a passage in which he is primarily concerned with the issues of composition and where Composition II is reproduced as a reference, he divides compositions into two groups: "1. Simple composition, which is subordinated to a clearly apparent simple form. I call this type of composition melodic. 2. Complex composition, consisting of several forms, again subordinated to an obvious or concealed principal form. This principal form may externally be very hard to find, whereby the inner basis assumes a particularly powerful tone. This complex type of composition I call symphonic."*

"He goes on to discuss diverse elements of the Compositions in overtly musical terms, clarifying his understanding of a melodic composition as being that in which the objective element is eliminated to leave only the basic pictorial form-such as simple geometrical forms or a structure of simple lines that create general movement. The movement is either repeated in the individual parts of the painting or is varied by using different lines or forms. These are compositions that possess a simple inner soul; their creation and perception occur on a less complex level, where the perceptual and spiritual elements are fairly simple.

"In Kandinsky's view, melodic compositions were revitalized by Paul Cézanne *and later by the Swiss Symbolist Ferdinand Hodler. As an example of melodic composition, Kandinsky illustrated Cézanne's* Large Bathers *within the text of* On the Spiritual in Art, *stating that the picture represents "an example of this clearly laid out, melodic composition with open rhythms." Indeed, one observes a clear rhythm in the arrangement of trees and the figures gathered under the triangular canopy of rhythmically leaning trees. As in a musical composition, the rhythms add vitality to the pictorial composition, inviting the eye to travel from one form to the next according to a regularly determined motion.*

"The section on rhythm in his conclusion to On the Spiritual in Art *reveals much about Kandinsky's philosophical approach, whereby every phenomenon in nature, not only in music but also in painting, has its own structural rhythm. He felt that numerous pictures, especially woodcuts and miniatures from earlier periods, represented excellent examples of "complex 'rhythmic' composition with a strong intimation of the symphonic principle. Among these types he included the work of old German masters, of the Persians and the Japanese, Russian icons, and particularly Russian folk prints. But he observed that in most of these early works the symphonic composition is very closely tied to the melodic one, where principally the objective element underlies the structure.*

"For Kandinsky, if that objective element of a painting were taken away, the building blocks of the composition would reveal themselves to cause a feeling of repose and tranquil repetition, of well-balanced parts. A similar feeling is evoked by diverse modes of musical expression, for instance early choral music or the music of Mozart or Beethoven . However, when the objective element is in place, especially beginning with Composition IV, all of the juxtapositions, conflicts, and dissonances are arranged in a manner that parallels Schoenberg's own innovations."

Excerpted from "Kandinsky: Compositions," by Magdalena Dabrowski
http://www.artchive.com/artchive/K/kandinsky.html]

Kandinsky, *Concerning the Spiritual in Art*

V: The Effect of Color

If you let your eye stray over a palette of colors, you experience two things. In the first place you receive a purely physical effect, namely the eye itself is enchanted by the beauty and other qualities of color. You experience satisfaction and delight, like a gourmet savoring a delicacy. Or the eye is stimulated as the tongue is titillated by a spicy dish. But then it grows calm and cool, like a finger after touching ice. These are physical sensations, limited in duration. They are superficial, too, and leave no lasting impression behind if the soul remains closed. Just as we feel at the touch of ice a sensation of cold, forgotten as soon as the finger becomes warm again, so the physical action of color is forgotten as soon as the eye turns away. On the other hand, as the physical coldness of ice, upon penetrating more deeply, arouses more complex feelings, and indeed a whole chain of psychological experiences, so may also the superficial impression of color develop into an experience.

On the average man, only impressions caused by familiar objects will be superficial. A first encounter with any new phenomenon exercises immediately an impression on the soul. This is the experience of the child discovering the world; every object is new to him. He sees a light, wishes to hold it, burns his finger and feels henceforth a proper respect for flame. But later he learns that light has a friendly side as well, that it drives away the darkness, makes the day longer, is essential to warmth and cooking, and affords a cheerful spectacle;. From the accumulation of these experiences comes a knowledge of light, in-delibly fixed in his mind. The strong, intensive interest disappears, and the visual attraction of flame is balanced against indifference to it. In this way the whole world

becomes gradually disenchanted. The human being realizes that trees give shade, that horses run fast and automobiles still faster, that dogs bite, that the moon is distant, that the figure seen in a mirror is not real.

Only with higher development does the circle of experience of different beings and objects grow wider. Only in the highest development do they acquire an internal meaning and an inner resonance. It is the same with color, which makes a momentary and superficial impression on a soul whose sensibility is slightly developed. But even this simplest effect varies in quality. The eye is strongly attracted by light, clear colors, and still more strongly by colors that are warm as well as clear; vermilion stimulates like flame, which has always fascinated human beings. Keen lemon-yellow hurts the eye as does a prolonged and shrill bugle note the ear, and one turns away for relief to blue or green.

But to a more sensitive soul the effect of colors is deeper and intensely moving. And so we come to the second result of looking at colors: their psychological effect. They produce a correspondent spiritual vibration, and it is only as a step towards this spiritual vibration that the physical impression is of importance.

Whether the psychological effect of color is direct, as these last few lines imply, or whether it is the outcome of association, is open to question. The soul being one with the body, it may well be possible that a psychological tremor generates a corresponding one through association. For example, red may cause a sensation analogous to that caused by flame, because red is the color of flame. A warm red will prove exciting, another shade of red will cause pain or disgust through association with running blood. In these cases color awakens a corresponding physical sensation, which undoubtedly works poignantly upon the soul.

If this were always the case, it would be easy to define by association the physical effects of color, not only upon the eye but the other senses. One might say that bright yellow looks sour, because it recalls the taste of a lemon. But such definitions are not universal. There are several correlations between taste and color which refuse to be classified. A Dresden doctor reported that one of his patients, whom he designated as an "exceptionally sensitive person," could not eat a certain sauce without tasting "blue," i.e., without "seeing blue."1 It would be possible to suggest, by way of explanation, that in highly sensitive people the approach to the soul is so direct, the soul itself so impressionable, that any impression of taste communicates itself immediately to the soul, and thence to the other organs of sense (in this case, the eyes). This would imply an echo or reverberation, such as occurs sometimes in musical instruments which, without being touched, sound in harmony with an instrument that is being played. Men of sensitivity are like good, much-played violins which vibrate at each touch of the bow.

But sight has been known to harmonize not only with the sense of taste but with the other senses. Many colors have been described as rough or prickly, others as smooth and velvety, so that one feels inclined to stroke them (e.g., dark ultramarine, chromoxide green, and madder-lake). Even the distinction between warm and cool colors is based upon this discrimination. Some colors appear soft (madder-lake), others hard (cobalt green, blue-green oxide), so , that fresh from the tube they seem to be "dry."

The expression "perfumed colors" is frequently met with.

The sound of colors is so definite that it would be hard to find anyone who would express bright yellow with bass notes, or dark lake with the treble. The explanation in terms of association will not satisfy us, in many important cases. Those who have heard of chromotherapy know that colored light can influence the whole body. Attempts have been made with different colors to treat various nervous ailments. Red light stimulates and excites the heart, while blue light can cause temporary paralysis. If the effect of such action can be observed in animals and plants, as it has, then the association theory proves inadequate. In any event one must admit that the subject is at present unexplored, but that it is unquestionable that color can exercise enormous influence upon the body as a physical organism.

The theory of association is no more satisfactory in the psychological sphere. Generally speaking, color directly influences the soul. Color is the keyboard, the eyes are the hammers, the soul is the piano with many strings. The artist is the hand that plays, touching one key or another purposively, to cause vibrations in the soul.

It is evident therefore that color harmony must rest ultimately on purposive playing upon the human soul; this is one of the guiding principles of internal necessity.

VI: The Language of Form and Color

The man that hath no music in himself,
Nor is not moved with concord of sweet sounds,
Is fit for treasons, stratagems, and spoils;
The motions of his spirit are dull as night,
And his affections dark as Erebus:
Let no such man be trusted.
Mark the music.
The Merchant of Venice, Act V, Sc. i.

Musical sound acts directly on the soul and finds an echo there, since music is innate in man.
"Everyone knows that yellow, orange, and red suggest ideas of `joy and plenty' " (Delacroix)."

The above quotations show the deep relations among the arts, and especially between music and painting. Goethe said that painting must consider this relation its ground, and by this prophetic remark he foretold the position of painting today. Painting stands, in fact, at the first stage of the road by which it will, according to its own possibilities, grow in the abstract sense and arrive finally at painterly composition.

For this ideal of composition, painting has two means at its disposal:
Color.
Form.
Form can stand alone, as a representation of an object ("real" or not), or as an abstract limit to a space or a surface.

Color cannot stand alone; it cannot dispense with boundaries of some kind. An unlimited expanse of red can only be seen in the mind; when the word red is heard, the color is evoked without definite boundaries; if they are necessary, they have to be imagined deliberately. But red as is seen abstractly and not materially arouses both a precise and an unprecise impression on the soul, which has a purely internal physical sound .2 This red has also no independent transition to warmth or cold; the same must be imagined as subtleties of the red tone. Therefore, I call this spiritual seeing "unprecise." However, it is at the same time "precise," since the inner sound remains without incidental tendencies to warm and cold, etc. This inner sound is similar to the sound of a trumpet or an instrument which one can imagine one hears when the word "trumpet" is pronounced. This sound is not detailed; it is imagined without the variations that occur depending upon whether the trumpet is sounded in the open air, in a closed room, alone or with other instruments, if played by a postilion, a huntsman, a soldier or a professional.

But when red is presented concretely (as in painting), it must possess 1) some definite shade of the innumerable shades of red that exist and (2) a limited surface, divided off from other colors which are unconditionally there; this may under no circumstance be avoided, and by this means, through delimitation and proximity, the subject characteristics change, i.e., receive an objective sheath, here the objective "accompanying sound."

The inevitable relation between color and form brings us to the question of the influences of form on color. Form alone, even though abstract and geometrical, has its internal resonance, a spiritual entity whose properties are identical with the form. A triangle (without consideration of its being acute or obtuse or equilateral) is such an entity, with its particular spiritual perfume. In relation to other forms this perfume may be somewhat modified, but it remains in intrinsic quality the same, as the scent of the rose cannot be mistaken for that of the violet. The case is similar with a circle, a square or any conceivable geometrical figures As above, with red, we have a subjective sub- stance in an objective sheath.

The mutual relation of form and color now becomes clear. A yellow tri- angle, a blue circle, a green square, or a green triangle, a yellow circle, a blue square: all these are differently acting entities. ', It is evident that certain colors can be emphasized or dulled in value by certain forms. Generally speaking, sharp colors are well suited to sharp forms (e.g., yellow in the triangle), and soft, deep colors by round forms (e.g., blue in the circle). But it must be remembered that an unsuitable combination of I, form and color is not necessarily discordant, but may with manipulation show fresh harmonic possibilities.

Since the number of colors and forms is infinite, their combinations also are infinite, and, simultaneously, their effect. This material is inexhaustible.

Form, in the narrow sense, is the boundary between one surface and another: that is its external meaning. But it has also an internal significance, of varying intensity; and properly speaking form is the external expression of inner meaning. To use again the metaphor of the piano, and substituting form for color, the artist is the hand which, by playing this or that key (i.e., form), purposely vibrates the human soul in this or that way. It is evident that form harmony must rest only on the purposive vibration of the human soul. This principle has been designated here as the principle of internal necessity.

The two aspects of form define its two aims. The external boundary is purposive only when it realizes expressively the meaning of form. The external aspect of farm, i.e., the boundary, may assume different shapes; but it will never overstep two external limits:

(1) Either a form aims at delimiting a concrete object two-dimensionally,

(2) Or a form remains abstract, a purely abstract entity. Such abstract entities, which have life in themselves, are a square, a circle, a triangle, a rhombus, a trapezoid, etc., many of them so complicated as to have no mathematical formula. All these forms are of equal rank in the abstract realm.

Between these two boundaries lie the innumerable forms in which both elements exist, with a preponderance of either the abstract or the concrete. These forms are at present largely the treasure from which the artist draws all the component elements of his creations. Purely abstract forms are in the reach of few artists at present; they are too indefinite for the artist. It seems to him that to limit himself to the indefinite would be to lose possibilities, to exclude the human and therefore to weaken expression.

Nevertheless, there are artists who even today experience abstract form as something quite precise and use it to the exclusion of any other means. This seeming stripping bare becomes an inner enrichment.

On the other hand, there exists no purely material form. A material object cannot be absolutely reproduced. For better or worse the artist depends on his eye, his hand, which in this case are perhaps more artistic than his soul that would confine itself to photographic aims. But the discriminating artists who cannot be content with an inventory of material objects seek to express objects a by what was once called "idealization," and later "stylization," and which in the future will again be called something else.

The impossibility and, in art, the purposelessness of copying an object, the desire to make the object express itself, are the beginning of leading the artist away from "literary" color to artistic, i.e., pictorial aims. And this brings us to the question of composition. The purely pictorial composition has in regard to form two aims:

1. The composition of the whole picture.

2 . The creation of the various forms which, by standing in different relations to each other, serve the composition of the whole. Many objects (concrete, abstract and purely abstract) have to be considered in the light of the whole, and so arranged as to suit this whole. Singly they will have little meaning, being of importance only so far as they help the general effect. These single objects must be fashioned in one way only; this, not because their internal meaning demands that particular means, but because they must serve as . material for the whole. Here we have defined the first problem, which is the composition of a whole canvass

Thus the element of the abstract is creeping into art, although yesterday it was derided and ignored for mundane ideals. Its gradual advance and eventual success is natural enough, for as representational form falls into the background, the abstract gains.

But residual organic forms possess, nevertheless, an internal sound of their own, which may be similar to that of their abstract parallel (thus producing a simple combination of the two elements) or different (in which case the combination may be complex and possibly discordant). However diminished in importance organic forms may be, their internal sound will always be heard; for this reason the choice of natural objects in painting is an important one. The spiritual accord of naturalism with the abstract may strengthen the appeal of the latter (either by concord or counterpoint), or may be disturbing, to it. The subject may possess only a casual sound, which would not effect an essential change in the fundamental harmony if the subject were replaced.

Let us suppose a rhomboidal composition, made up of human figures. The artist asks himself: Are these human figures absolutely necessary to the composition, or could they be replaced

by other organic forms, without affecting the fundamental harmony of the whole? If the answer is in the affirmative, we have a case in which the materialistic appeal not only does not help the abstract but damages it directly. An indifferent sound in the object weakens the sound of the abstract. This is not only logical but an actual artistic fact. Therefore, in this case another object should be found which is more suitable to the inner sound of the abstract (either through similarity or contrast), or this entire form should, generally speaking, remain a purely abstract form.

Once more the metaphor of the piano applies: for "color" or "form" substitute "object." Every object (whether a natural form or man-made) has its own life and therefore its own potency; we are continually being affected by spiritual potency. Many results will remain in the "subconscious" (where they continue to be alive and creative). Many rise to the "super-conscious." Man can free himself from many of these by shutting his soul to them. Nature, that is to say, the ever changing surroundings of men, sets in vibration the strings of the piano (the soul) by manipulation of the keys (various objects with their specific potentialities).

The effects we receive, which often appear chaotic, consist of three elements: the action of the color of the object, of its form, and of the object per se, independent of either color or form.

At this point the individuality of the artist asserts itself and makes use of these three elements. Here too the purposive prevails. It is clear, therefore, that the choice of an object (i.e., one of the elements of form) must be decided by a purposive vibration in the human soul; therefore, the choice of the object' also originates from the principle of internal necessity.

The freer the abstract form, the purer and more primitive the vibration. Therefore, in any composition where corporeal form seems superfluous it may be replaced by abstract or semi-abstract form. In each case this translation should be guided by our feeling. The more an artist uses these semi-abstract or abstract forms, the deeper and more confidently will he advance into the sphere of the abstract. And after him will follow those who look at his pictures, who will in turn gradually acquire familiarity with the language of abstract art.

Must we then altogether abandon representation and work solely in abstraction? The problem of harmonizing the appeal of the concrete and the abstract answers this question. Just as each spoken word rouses an internal vibration, so does every object represented. To deprive oneself of this possibility of causing a vibration would be reducing one's arsenal of means of expression: anyhow, that is the case today. But besides this, there is another one which art can always offer to any question beginning with "must": There is no "must" in art, because art is always free.

With regard to the second problem of composition, the creation of the forms which are to compose the whole, it must be remembered that the same form with the same relations will always have the same internal appeal. Only the relations constantly vary. The result is that: (1) Ideal harmony alters according to its relation with other forms; (2) Even in similar relations, a slight approach to or withdrawal from other forms may affect the structure. Nothing is absolute. Form composition is relative, depending on (1) alterations in the relations of one form to another, and (2) alterations in each individual form, down to the very smallest. Every form is as sensitive as smoke, the slightest wind will fundamentally alter it. This extreme mobility makes it perhaps easier to obtain similar harmonies from the use of different forms than from a repetition of the same one: apart from the fact that, of course, an exact repetition can never be produced. So long as we are susceptible mainly to the appeal of a whole composition, this fact is of theoretical importance. But when we become more sensitive, by a constant use of abstract forms (which have no material interpretation), it will become of great practical significance. On the one hand, the difficulties of art will increase, but at the same time the wealth of forms of expression will also increase in quality and quantity. Simultaneously the problem of distortion in drawing disappears and is replaced by the problem of how far the internal structure of a particular form is veiled or bared. This changed point of view will lead further and to greater enrichment of the media of expression because veiling is of enormous power in art. The combining of the veiled and bared will form a new possibility of leitmotivs in form composition.

Without such development as this, form composition is impossible. To any-one who cannot experience the internal structure of form (whether natural or abstract), composition must be meaningless and arbitrary. Apparently aimless alterations in arrangement make art seem a senseless game of forms. Here we find the same criterion and principle which thus far we have encountered everywhere as the only purely artistic one free from the unessential, the principle of inner necessity.

If, for example, features of the face or parts of the body are changed or distorted for artistic reasons, one encounters not only the purely pictorial question but also that of anatomy, which hampers the pictorial intention and imposes upon it the consideration of unimportant details. In our

case, however, the unessential disappears automatically and only the essential remains, the artistic aim. These seemingly arbitrary but, in reality, well-reasoned alterations in form are one of the sources of an infinite number of artistic creations.

The flexibility of each form, its internal, organic variation, its direction(motion) in the picture, the relative weight of concrete or of abstract forms and their combination; further, the concord or discord of the various elements to a pictorial structure, the handling of groups, the combination of the hidden and the stripped bare, the use of rhythmical or unrhythmical, of geometrical or non-geometrical forms, their contiguity or separation - all these things are the elements of structure in drawing.

But as long as color is excluded, such structure is confined to black and white. Color itself offers contrapuntal possibilities and, when combined with design, may lead to the great pictorial counterpoint, where also painting achieves composition, and where pure art is in the service of the divine. The same infallible guide will carry it to the great heights, the principle of internal necessity.

Inner necessity originates from three elements: (1) Every artist, as a creator, has something in him which demands expression (this is the element of personality). (2) Every artist, as the child of his time, is impelled to express the spirit of his age (this is the element of style) - dictated by the period and particular country to which the artist belongs (it is doubtful how long the latter distinction will continue). (3) Every artist, as a servant of art, has to help the cause of art (this is the quintessence of art, which is constant in all ages and among all nationalities).

A full understanding of the first two elements is necessary for a realization of the third. But he who realizes this will recognize that a rudely carved Indian column is an expression of the spirit that actuates any advance-guard work.

There has been in the past, and there is now, much talk of "personality" in art. Talk of the coming "style" is more frequent each day. But in spite of their importance now, these questions will lose their edge under the perspective of time.

Only the third element - that of quintessential art - will remain forever. Time, far from diminishing its importance, increases it. An Egyptian carving moves us more deeply today than it did its contemporaries; for they judged it with the restrictive knowledge of period and personality. But we can judge it as an expression of an eternal art.

Similarly, the greater the part played in a modern work of art by the elements of style and personality, the better will it be appreciated by people today; but a modern work of art which is full of the third element will fail to reach the contemporary soul. Sometimes centuries have to pass before the third element is understood. But the artist in whose work this third element predominates is the great artist.

These three mystical necessities are the constituent elements of a work of art, which interpenetrate and constitute unity of the work. Nevertheless, the first two elements include what belongs to time and space, while in the pure and eternal artistry, which is beyond time and space, this forms a relatively non-transparent shell. The process in the development in art consists of the separation of its quintessence from the style of the time and the element of personality. Thus, these two elements are not only a cooperative but also a hindering force. The personality and the style of the time create in every epoch many precise forms, which in spite of apparent major differences are so organically related that they can be designated as one single form: their inner sound is finally but one major chord. These two elements are of a subjective nature. The entire epoch desires to reflect itself, to express artistically its life. Likewise, the artist wishes to express himself and chooses only forms which are sympathetic to his inner self. Thus, gradually is formed the style of an epoch, i.e., a certain external and subjective form. The pure and eternal art is, however, the objective element which becomes comprehensible with the help of the subjective.

The inevitable desire for expression of the objective is the impulse here defined as "internal necessity." This impulse is the lever or spring driving the artist forward. Because the spirit progresses, today's internal laws of harmony are tomorrow's external laws, which in their further application live only through this necessity which has become external. It is clear, therefore, that the inner spirit of art uses the external form of any particular period as a stepping-stone to further development.

In short, the effect of internal necessity and the development of art is an ever advancing expression of the eternal and objective in terms of the historical and subjective.

Because the objective is forever exchanging the subjective expression of today for that of the morrow, each new extension of liberty in the use of external form is hailed as final and supreme. At present we say that an artist may use any form, so long as he draws on forms that exist in nature. But

this limitation, like all its predecessors, is temporary. From the point of view of inner need, no limitation can be made. The artist may use any form which his expression demands; his inner impulse must find suitable external form.

Thus one sees finally (and this is of utmost importance for today or any time) that to seek for personality and "style," for nationality, to achieve this deliberately, is not only impossible but comparatively unimportant. The general relationship of those works of art which through the centuries are not weakened but always more and more strengthened, does not lie in the "external" but in the deep roots of mystical inner content. Therefore, the following of schools, the searching for the "mode," the desire for principles in a work and the insistence upon certain media of expression of a period can only be misleading and must bring misunderstanding, obscurity and silence.

The artist must ignore distinctions between "recognized" or "unrecognized" conventions of form, the transitory knowledge and demands of his particular age. He must watch his own inner life and hearken to the demands of internal necessity. Then he may safely employ means sanctioned or forbidden by his contemporaries. This is the only way to express the mystical necessity. All means are sacred which are called for by internal necessity. All means are sinful which are not drawn from inner necessity.

It is impossible to theorize about this ideal. In real art, theory does not precede practice but follows it. Everything is at first a matter of feeling. Even though the general structure may be formulated theoretically, there is still an additional something which constitutes the soul of creation. Any theoretical scheme will be lacking in the essential of creation - the internal desire for expression - which cannot be formulated. Despite the most accurate weights and balances to be had, a purely deductive weighing can never suffice. True proportions cannot be calculated, nor true scales be found ready-made. Proportions and scales are not outside the artist but within him; they are what we may call a feeling for boundaries, artistic tact - qualities which are innate and which may be raised by enthusiasm to genius. In this sense we may understand the possibility of a general base to painting, as envisaged by Goethe. Such a grammar of painting is at present a matter of conjecture, and, should it ever be achieved, it will be not so much according to physical laws (which have often been tried and which the cubists try today), as according to the laws of internal necessity, which is of the soul.

Inner necessity is the basis of both small and great problems in painting. Today we are seeking the road which is to lead us away from the external to the internal basis. The spirit, like the body, can be strengthened and developed by frequent exercise: just as the body, if neglected, grows weak and finally impotent, so the spirit perishes if untended. The innate feeling of the artist is the biblical talent which must not be buried in the earth. And for this reason it is necessary for the artist to know the starting-point for the exercise of his spirit.

The starting-point is the study of color and its effects on men.

There is no need to deal with the profound and refined complexities of color; we should consider at first only the direct use of simple colors.

To begin with, let us test the effect upon ourselves of individual colors, and make a chart, which will simplify the whole question.

Two great divisions of color immediately occur to the mind: warm and cool; and light and dark. Thus it becomes evident that each color may have four principal notes: either (i) warm, and therefore either light or dark; or (2) cold, and either light or dark.

Generally speaking, warmth or coolness in a color means an approach to yellow or to blue. This distinction occurs on one level, so to speak: i.e., the color preserves its basic quality, but this quality is, now more, now less, earthy. It represents a horizontal movement, the warm colors approaching the spectator, the cool ones retreating from him.

The colors that cause in another color a horizontal movement while they are themselves affected by it have another movement of their own, which acts

j with a violent, separative force. This is therefore the first great antithesis in

internal value, and the inclination of the color to cool or warm is of tremendous importance.

The second great antithesis is between white and black; i.e., the inclination to light or dark caused by the two tones. These tones have, too, a peculiar movement to and from the spectator, but in a more rigid form.

Yellow and blue have another movement which affects the first antithesis - an eccentric and concentric movement. If two circles are drawn and painted respectively yellow and blue, a brief contemplation will reveal in the yellow a spreading movement out from the center, and a noticeable approach to the spectator. The blue, on the other hand, moves into itself, like a snail retreating into its

shell, and draws away from the spectator. The eye feels stung by the first circle while it is absorbed into the second.

In the case of light and dark colors movement is emphasized. That of the yellow increases with an admixture of white, i.e., as it becomes lighter. That of the blue increases with an admixture of black, i.e., as it becomes darker. This fact has a greater importance if we note that yellow inclines to the light (white) to such an extent that there can be no very dark yellow. The relationship between white and yellow is as close as between black and blue, for blue can be so dark. as to border on black. Besides this physical relation, there is also a spiritual one (between yellow and white on one side, and blue and black on the other), which marks a strong separation between the two pairs.

An attempt to make yellow colder produces a greenish tint and checks both the horizontal and eccentric movement. The color becomes sickly and unreal, like an energetic man who has been checked in the use of his energy by external circumstances. The blue by its contrary movement acts as a brake on the yellow and is hindered in its own movement, and, if more blue is added, the contrary movements cancel each other and complete immobility ensues. The result is green. Similarly white, when mixed with black, loses permanence, and the result is gray, which is spiritually similar to green.

But while yellow and blue are potentially active in green, though temporarily paralyzed, in gray there is no possibility of movement because gray consists of colors that have no motive power, one representing static resistance, the other non-resistant immobility (like an endless wall or a bottomless pit).

Because the component colors of green are active and have a movement of their own, it is possible, even theoretically, on the basis of this movement, to determine (or anticipate) their spiritual effect.

We reach the same results by proceeding experimentally in having colors act upon us. The first movement of yellow, that of straining toward the spectator (which can be increased by intensifying the yellow), and the second movement, that of overrunning the boundaries, having a material parallel in that human energy which attacks every obstacle blindly and goes forth aimlessly in all directions.

If steadily gazed at in any geometrical form, yellow has a disturbing influence; it pricks, upsets people, and reveals its true character, which is brash and importunate. The intensification of yellow increases the painful shrillness of its note, like that of a shrill bugle.

Yellow is the typical earthly color. It never acquires much depth. When cooled by blue, it assumes, as I have said before, a sickly tone. If we were to compare it with human states of mind, it might be said to represent not the depressive, but the manic aspect of madness. The madman attacks people and disperses his force in all directions, aimlessly, until it is completely gone. To use another metaphor, we are reminded of the last prodigal expansion of summer in the glaring autumn foliage, whose calming blue component rises to the sky.

Depth is found in blue, first in its physical movements (I) of retreat from the spectator, (2) of turning in upon its own center. It affects us likewise mentally in any geometrical form. The deeper its tone, the more intense and characteristic the effect. We feel a call to the infinite, a desire for purity and transcendence.

Blue is the typical heavenly color;''' the ultimate feeling it creates is one of rest. When it sinks almost to black, it echoes a grief that is hardly human It becomes an infinite engrossment in solemn moods. As it grows lighter it becomes more indifferent and affects us in a remote and neutral fashion, like a high, cerulean sky. The lighter it grows, the more it loses resonance, until it reaches complete quiescence, in other words, white. In music a light blue is like a flute, a darker blue a 'cello; a still darker the marvelous double bass; and the darkest blue of all - an organ.

Yellow easily becomes acute and is incapable of great depth. Conversely, blue resists pointing up and heightening. A well-balanced mixture of blue and yellow produces green; the horizontal movements cancel each other, and so do movements from and towards the center. Calm ensues. This is a fact recognized not only by oculists, but by the world. Absolute green is the most restful color, lacking any undertone of joy, grief or passion. On exhausted men this restfulness has a beneficial effect, but after a time it becomes tedious. Pictures painted in shades of green bear this out. As a picture painted in yellow always radiates spiritual warmth, or as one in blue has apparently a cooling effect, so green is only boring. Yellow and blue have an active effect corresponding to man's participation in continuous and perhaps eternal cosmic motion, whereas green represents the passive principle. This contrasts with the active warmth of yellow or the active coolness of blue. In the

hierarchy of colors green represents the social middle class, self-satisfied, immovable, narrow. 18 It is the color of summer, when nature is quiescent after the perturbations of spring (see Fig. II).

Any preponderance in the absolute green of yellow or blue introduces a corresponding activity and changes the inner appeal. The green keeps its characteristic equanimity and restfulness, the former increasing with the inclination to lightness, the latter with the inclination to depth. In music, absolute green is represented by the placid, middle notes of a violin.

Black and white have already been discussed in general terms. Speaking more particularly, white, although often considered as no color (a theory due largely to the impressionists, who saw no white in nature: Van Gogh, in his letters, asks whether he may not paint a white wall dead white. This question offers no difficulty to the non-representational artist, who is concerned only with the inner harmony of color. But to the impressionist-realist it appears a bold liberty to take. To him it seemed as outrageous as his own change from brown shadows to blue seemed to his contemporaries. Van Gogh's question marks a transition from impressionism to an art of spiritual harmony, as the coming of the blue shadow marked a transition from academicism to impressionism. See *The Letters of Vincent van Gogh*.), is a symbol of a world from which all colors as material attributes have disappeared. This world is too far above us for its structure to touch our souls. There comes a great silence which materially represented is like a cold, indestructible wall going on into the infinite. White, therefore, acts upon our psyche as a great, absolute silence, like the pauses in music that temporarily break the melody. It is not a dead silence, but one pregnant with possibilities. White has the appeal of the nothingness that is before birth, of the world in the ice age.

On the other hand, the ground-note of black is a silence with no possibilities. In music it is represented by one of those profound and final pauses, after which any continuation of the melody seems the dawn of another world: the circle is closed. Black is something burnt out, like the ashes of a funeral pyre, something motionless like a corpse. The silence of black is the silence of death. Outwardly black is the most toneless color of all, a kind of neutral background against which the minutest shades of other colors stand forth clearly. It also differs in this from white, in conjunction with which nearly every color becomes blurred, dissolves and leaves only a faint resonance.

White is not without reason taken to symbolize joy and spotless purity, and black, grief and death. A blend of black and white produces gray, which, as has been said, is silent and motionless, being composed of two inactive colors, its restfulness having none of the potential activity of green. The immobility of gray is desolate. The darker the gray the more preponderant becomes this feeling of desolation and strangulation. When it is made lighter, the color seems to breathe again, as if invested with new hope. A similar gray is produced by an optical mixture of green and red, a spiritual blend of passivity and glowing warmth.

The unbounded warmth of red has not the irresponsible appeal of yellow, but rings inwardly with a determined and powerful intensity. It glows in itself, maturely, and does not distribute its vigor aimlessly.

The varied powers of red are very striking. By a skilful use of it in its different shades, its fundamental tone may be made warm or cool.

Light warm red has a certain similarity to medium yellow, alike in texture and appeal, and gives a feeling of strength, vigor, determination, triumph. In music, it is a sound of trumpets, strong, harsh and ringing.

Vermilion is a red with a feeling of sharpness, like flowing steel which can be cooled by water. Vermilion is quenched by blue, for it can bear no mixture with a cold color: more accurately speaking, such a mixture produces what is called a muddy color, scorned by the painters of today. But mud as a material object has its own internal appeal, and therefore to avoid it in painting is as unjust and narrow as was yesterday's cry for pure color. At the call of internal necessity that which is outwardly foul may be inwardly pure, and vice versa.

These two shades of red are similar to yellow, except that they reach out less toward the spectator. The glow of red is within itself. For this reason it is a color more beloved than yellow, being frequently used in primitive and traditional decoration and also in peasant costumes, because in the open air the harmony of red and green is very charming. Taken by itself this red is material and, like yellow, has no very deep appeal. It is dangerous to seek to deepen red by an admixture of black, for black quenches the glow or at least reduces it.

There remains brown, unemotional, disinclined to movement. An intermixture of red is outwardly barely audible, but there does ring out a powerful inner harmony. Skilful blending can

produce an inner appeal of extraordinary, indescribable beauty. The vermilion now rings like a great trumpet or thunders like a drum.

Cool red (madder-lake), like any other fundamentally cool color, can be deepened, especially by an intermixture of azure. The character of the color changes; the inward glow increases, the active element gradually disappears.

But this active element is never so wholly absent as in deep green. There always remains a hint of renewed vigor somewhere out of sight, waiting for a certain moment in order to burst forth afresh. In this lies the great difference between a deepened red and a deepened blue, because in red there is always a trace of the material. Corresponding in music are the passionate, middle tones of a 'cello. A cool, light red contains a very distinct bodily or material element, but it is always pure, like the fresh beauty of a young girl's face. The singing notes of a violin exactly express this in music.

Warm red, intensified by a kindred yellow, is orange. This blend brings red almost to the point of spreading out towards the spectator. But the element of red is always sufficiently strong to keep the color from flippancy. Orange is like a man convinced of his own powers. Its note is that of a church-hell (the Angelus bell), a strong contralto voice, or the largo of an old violin.

Just as orange is red brought nearer to humanity by yellow, so violet is red withdrawn from humanity by blue. But the red in violet must be cool, for spiritual need does not allow of a mixture of warm red with cold blue.

Violet is therefore both in the physical and spiritual sense a cooled red. It has a morbid, extinct quality, like slag. It is worn by old women, and in China it is the garb of mourning. In music it is an English horn, or the deep notes of woodwinds (e.g., a bassoon).?'

The last two colors, which result from mixing red with yellow or blue, are rather unstable. We are reminded of a tight-rope walker who has to balance himself continuously. Where does orange start, and either red or yellow cease? Where is the border-line dividing violet from red or blue, and when does it become lilac? Orange and violet are the fourth and last pair of antitheses of the primitive colors. They stand to each other in the same relation as the third antithesis - green and red -, i.e., as complementary colors.

As in a great circle, a serpent biting its own tail (the symbol of eternity, of something without end), appear the six colors that make up the three main antitheses. And to right and left stand the two great possibilities of silence death and birth.

It is clear that all I have said of these simple colors is very provisional and general, and so are the feelings (joy, grief, etc.) which have been quoted as parallels to the colors. For these feelings are only material expressions of the soul. Shades of color, like those of sound, are of a much finer texture and awaken in the soul emotions too fine to be expressed in prose. Certainly each tone will find some probable expression in words, but there will always be something left over, which the word fails to express and which yet is not supererogatory but the very kernel of its existence. For this reason words are, and will always remain, hints, mere suggestions of colors. In this impossibility of expressing color in words, with the consequent need for some other mode of expression, lies the possibility of a monumental art. In this art, among in-'. numerable rich and varied combinations, at least one is based on firm fact and is as follows: the same internal tone may be achieved by the different arts; each art will bring to this general tone its own special characteristics, thereby adding to it a richness and a power which no one art form could achieve. The immense possibilities of profundity and strength to be gained by combination or by discord between the various arts may be easily realized.

It is often said that to admit the possibility of one art replacing another (for example, painting by literature) amounts to a denial of the necessary difference between the arts. This is not the case. An absolutely similar inner tone cannot be achieved by two different arts: even if it were possible, the second version would differ at least outwardly. But suppose this were not the case, that is to say, suppose that a repetition of the same tone, exactly similar both outwardly and inwardly, could be achieved by different arts: such repetition would not be merely superfluous. To begin with, different people find affinity with different farms of art (alike on the active and passive side, among the creators or the audience): further and more important, repetition of the same tones thickens the spiritual milieu that is necessary for the maturing of the finest feelings, in the same way that the warm air of a greenhouse is necessary for the ripening of fruit. An example of this is the case of the individual who receives a powerful impression from constantly repeated actions, thoughts or feelings, although if they had come singly they might have passed unnoticed .2g However, we must not apply this rule only to the simple examples of the spiritual atmosphere. For this atmosphere is like air, which can be pure or filled with various foreign elements. Not only visible actions, thoughts and feelings,

<mark>with their external expression, make up this atmosphere, but the secret happenings of which no one knows; unspoken thoughts, hidden feelings are also elements. Suicide, murder, violence, low and unworthy thoughts, hate, ,hostility, egotism, envy, narrow "patriotism," partisanship, are elements of the spiritual atmosphere .</mark>

And conversely, self-sacrifice, mutual help, lofty thoughts, love, unselfishness, joy in the success of others, humanity, justness, are the elements which destroy those already enumerated, just as the sun destroys microbes and restores the atmosphere to purity.

The second and more complicated form of repetition is that in which several elements make mutual use of different forms. In our case these elements are the various arts summed up in monumental art. And this form of repetition is even more powerful, because different natures respond to different elements in the combination. For one, musical form is the most moving and impressive; for another, the pictorial, for the third the literary, and so on. There lie, therefore, in arts that are outwardly different hidden forces equally different, so that they may all work towards a single result, even though each art may be working in isolation.

This not easily definable action of isolated colors is the basis upon which various values can be harmonized. Paintings, art objects, whole settings, may be based on a certain harmony chosen with artistic tact. The carrying out of one color, the binding together and admixture of two related colors, are the foundation of most color harmonies. From what has been said about color action, from the fact that we live in a time of questioning, experiment and contradiction, we may draw the conclusion that for <mark>a harmonization on the basis of individual colors our age is especially unsuitable. Perhaps with envy and with a mournful sympathy we listen to the music of Mozart. It acts as a welcome pause in the turmoil of our inner life, as a consolation and as a hope, but we hear it as the echo of something from another age long past and funda mentally strange. The strife of colors, the sense of the balance we have lost, tottering principles, unexpected assaults, great questions, apparently useless striving, storm and tempest, broken chains, antitheses and contradictions these make up our harmony. The composition arising from this harmony is a mingling of color and drawing, each with its separate existence, but each blended into a common life, which is called a picture by the force of internal necessity. Only the individual parts are essential. Everything else (including the representational element) is secondary.</mark> The combination of two colors is a logical outcome of modern conditions. The association of colors hitherto considered discordant is merely a further development. For example, the use, side by side, of red and blue - colors in themselves with no physical relation but from their spiritual contrast of strong effect - is one of the most frequent occurrences in modern structure .2s Harmony today rests chiefly on the principle of contrast, which has for all time been one of the most important principles of art. But our contrast is an internal contrast which stands alone and rejects the help (for help would mean destruction) of any other principles of structure. It is interesting to note that this placing together of red and blue was so beloved by the primitive both in Germany and Italy that it has survived until today, principally in popular religious carvings. One often sees in popular paintings and painted sculpture the Virgin in a red gown and a blue cloak: it seems that the artists wished to express the grace of heaven in terms of humanity, and humanity in terms of heaven. Legitimate and illegitimate combinations of colors, the shock of contrasting colors, the silencing of one color by another, the sounding of one color through another, the checking of fluid color spots by contours of design, the overflowing of these contours, the mingling and the sharp separation of surfaces, all these open great vistas of purely pictorial possibility.

One of the first steps away from representation and toward abstraction was, in the pictorial sense, the exclusion of the third dimension, i.e., the tendency to keep the picture on a single plane. Modeling was abandoned. In this way the concrete object was made more abstract, and an important step forward was achieved - this step forward has, however, had the effect of limiting the possibilities of painting to the actual surface of the canvas: and thus painting acquired another material limit.

Any attempt to free painting from this material limitation, together with the striving after a new form of composition, must concern itself first of all with the destruction of the theory of one single surface - attempts have been made to place the picture on some ideal plane, which of course had to exist prior to the material plane of the canvas. Out of composition in flat triangles has developed a composition with plastic three-dimensional triangles, that is to say, with pyramids; and this is cubism. But here a tendency has arisen towards inertia, towards a concentration on form for its own sake, and consequently once more a reduction of potential values. But that is the unavoidable result of the external application of an inner principle.

A further point of great importance must not be forgotten. There are other ways of using the concrete plane as a space of three dimensions in order to create an ideal plane: the thinness or thickness of a line, the placing of the form on the surface, the crossing of one form by another may be mentioned as examples of the extension of picture space in depth through drawing. Similar possibilities are offered by color, which, when rightly used, can advance or retreat, and can make of the picture suspended, non-material form.

The combination of both means of extension-in-depth in harmony or counter- point is one of the richest and most powerful elements in pictorial structure.

Serial Music

Music traditionally centered on one tone of twelve.

A A# B C C# D D# E F F# G G#

1 2   3 4 5   6 7   8 9 10 11 12

TONALITY = IN A KEY; ONE TONE FUNCTIONS AS A CENTER OF GRAVITY (L. BERNSTEIN: "HOME PLATE"); CERTAIN TONES MORE IMPORTANT THAN OTHERS

BASED ON ACOUSTICAL LAWS OF NATURE -- SERIES OF OVERTONES

Between 1890 and 1913, breakdown of tonality
Atonality = absence of tonality
Serialism = method of composing without tonality; organizational scheme; most important scheme in the 20th century.
Schoenberg: 1913 piano pieces developed "serialism" (twelve-tone, dodecaphonism, atonality)
The System:

EXTREMELY CEREBRAL APPROACH TO COMPOSING

TAKE 12 TONES, PLACE THEM IN AN ORDER (AT YOUR DISCRETION). THIS IS THE "TONE ROW."

Tone row must use all 12 tones

Tone row *cannot* be altered

Tone row *cannot* suggest a key

All tones are of equal importance

FOUR ALLOWABLE FORMS OF ROW

Original (O)

Retrograde (R): Start at end and go forward

Inverted: (I) Start at center, go our 4, and return; go back 4 and return

Inverted Retrograde (IR): reverse of inverted

TRANSPOSITION ALSO POSSIBLE: STARTING ON A TONE OTHER THAN THE FIRST, BUT KEEPING THE INTERVALLIC (INTERVAL = DISTANCE BETWEEN 2 TONES) RELATIONSHIPS THE SAME. C# - F - A = D - F# - A#

Since there are 12 tones, there are 12 possible transpositions for each form

12 x 4 = 48 possible versions of the row

BEFORE "COMPOSING" YOU MUST CONSTRUCT A "MATRIX" OF ALL 48 POSSIBLE VERSIONS; ALL COMPOSITION MUST MAKE USE OF THESE VERSIONS.

COMPOSITIONAL PROCESS:

Once you initiate one of the versions, you must complete it: NO repeating of tones is allowed.

Row may be picked up and completed by various instruments

Sax	XXX
Trumpet	XX
Clarinet	XXXXX
Piano	XX

May have more than one version of the row going at the same time.

Analysis requires using colored pencils, following O3, IR4, I2, etc.

Row need not (and usually doesn't) stay within one instrument: as melody unfolds, tone color changes = *Klangfarbenmelodie.*

If you want the same note twice, eg. EE, you must look to another row where E is at the beginning, etc.

TWO ISSUES CONTROVERSIAL AMONG SERIAL COMPOSERS

Vertical sounding of row: eg. a piano "chord" may include 6 or 7 notes of the row simultaneous. Schoenberg did not accept this at first, but gradually did.

How do you listen? Horizontally-- Schoenberg; Vertically--Hindemith.

FORM:

Schoenberg was ABSOLUTELY strict about using 18th century FORMS: sonata, rondo, minuet, etc.

Thus were he and followers deemed the "Second Viennese School."

IMPLICATIONS:

Anything can be serialized: rests and silences, non-musical sound events (John Cage using "aleatoric method" according to mathematical laws of chance).

Position of Schoenberg in 1990s: his theory is more important than his music

Leon Botstein: Brahms - Schoenberg associations

       linear approaches

       Non congruence of musical lines (Walter Frison: "ongoing variation")

       Rhythm: Brahms wanted escape from "tyranny of barline": negated regularity of beat.

Schoenberg - Bach associations:

       linear approach

       Polyphony (musical texture): combination of muisical lines (imitative and non-imitative)

What IS subjective in this objective system?

       Construction of row

       Use of rows: choices.

What are 20th century composers to do beyond this?