Paul Klee  Notebooks
Volume 1
The thinking eye
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The writings which compose Paul Klee's theory of form production and pictorial form have the same importance and the same meaning for modern art as had Leonardo's writings which composed his theory of painting for Renaissance art. Like the latter, they do not constitute a true and proper treatise, that is to say, a collection of stylistic and technical rules, but are the result of an introspective analysis which the artist engages in during his work and in the light of the experience of reality which comes to him in the course of his work. This analysis which accompanies and controls the formation of a work of art is a necessary component of the artistic process, the aim and the finality of which are brought to light by it. This explains too how the experience of reality which is acquired in seeking aesthetic value is no less concrete or less conclusive than that which is acquired in scientific or philosophic research.

It is well-known that Klee, more than any other artist of our century, was consciously detached from the main stream of modern art and its theoretical assumptions. In the same way, Leonardo, more than any other artist of the Renaissance, consciously detached himself from the central features of the historical tradition. In their creative thought both Leonardo and Klee are not so much concerned with the art object, as with the manner in which it is produced. They are concerned not with form as an immutable value, but with formation as a process. Both are aware that the artist's approach or creative manner is an independent and complete way of existing in reality and of understanding it; and as they are not unaware that there are other speculative methods, they are led to investigate that particular character which is the distinctive feature of the artistic approach, always bearing in mind, however, that this must develop over the whole field of experience. For this reason Leonardo's mode of thought, like that of Klee, covers every aspect of being; it takes in the entire universe. Since art brings us into being, albeit only through what is termed the visible, a cosmic awareness of reality, there is no moment or aspect of being which can be considered foreign or irrelevant to the experience which is acquired in artistic creation.

Historically speaking, Klee's poetics can be linked to what might be called the poetics of contradiction, that is to say, poetics from Mallarmé to Rilke. Klee was a friend of the latter;
and Klee’s thoughts on art were linked by at least two sources of common interest to the poetics of Mallarmé: Wagner, whom he as a passionate lover of music he knew very well, and Poe, who certainly was one of the sources of his pictorial inspiration.

The fundamental themes are always those of non-positivity, of ugliness, of the uncertainty of existence, of the amorphous nature of reality, and the need to fill that void by human endeavour and artistic creation. Nor are these born of an impious creative will, but of the contradiction which exists between an understanding of the anguish inherent in everything and our inductive awareness of existing, and of existing by necessity in one time, in one space, and in one world.

Everything that we know of reality (and this reality includes ourselves, the clear world of our consciousness and that murky and crepuscular world of the unconscious) comes to us through this tempestuous paradox. Nor is it a single and grandiose image which imposes itself on us by the logical system of its eternal values, but a haphazard sequence of images, often dissociated and enigmatic, and always fragmentary throughout the full cycle of our existence. In turn, our existence is no more its time-space reality then that self-same succession of images; and there is no moment of our existence which is not an experience of reality. Those ambiguous images, then, are formed by ourselves. It is almost as if we evoke them from the darkness of a lost dimension, and revalue them by the rhythm of our actions, giving them meaning and form. For the threat does not come from the visage of the unconscious, but on the contrary, from within us something that is dead, which, being corrupted, corrupts us. This endeavour, therefore, and this endeavour alone, is the subject of a speculation on art.

Perhaps, like Mallarmé, Klee too dreamt of the absolute work of art, ‘œuvre’, and did not achieve it; his real work must be found in the mass of evidence testifying to his life of research, in his development by way of a vast number of fragments, in his rapid sequence of paintings, in page after page of sketches and notes, in the restless technical experiments (since every technique is an attempt at ‘trying’, a ‘coup de pêche’ that may even succeed in eliminating ‘le hasard’).

The writings which compose Klee’s theory of form are, in fact, an attempt to fix the moments of that unaccomplished creative work, which unravels with the devouring rapidity of time; to give meaning to arbitrary images, releasing them from the changeability of events and from shapelessness. These writings, therefore, more than any commentary, are a live and necessary part of the artist’s œuvre. Since they cannot be separated from the drawings which accompany them they cannot be separated either from his other pictorial and graphic works, from the various planes on which his works were being simultaneously developed, from the inevitable irregularity of his progress or from the coherence, no less severe for being full of the unexpected, of his intellectual adventure. Klee’s poetics, however, have this special quality, that in a large measure they are born and are formulated as didactics, like a well-prepared course of teaching given in a school with syllabuses and purposes precisely defined, as was the Bauhaus of Weimar and of Dessau. Of all the artists of this century, Klee is perhaps the one who has most purposefully penetrated into the enchanted realm of fantasy. It is as if he were seeking, whilst exploring the unconscious, the manifestation of an absolutely authentic and unique experience in which he would find himself alone in the suffering of the lonely ego, even reaching out to that ultimate and finally truthful manifestation of the ego which only comes to us at the moment of death. It cannot therefore be wondered at that his most constant preoccupation was to be able to communicate his own experience so that it could be repeatable and ‘utilisable’ and finally producible. Nor is this all; this man who looks upon nothingness with such a candid and dauntless eye, who ‘toys’ with death like Schiller’s artist ‘toys’ with life, employs his own poetics and his own didactics in a school which not only has a social and somewhat revolutionary syllabus, and sees in technology the new strict spirituality of the modern world, but proposes to intervene effectively in the existing state of affairs by forming a class of technical executives and planners capable of solving problems arising from industrial production and capitalist economy.

Klee always wanted to teach and he dedicated himself to the school with an almost apostolic fervour. Conscious that art should be a means of human communication, he saw in teaching, in the exactness of the didactic method, a strict means of human communication. It is a matter of teaching others how to walk along this invisible wire, stretched out in the darkness, trying to penetrate an unknown dimension. There can be no other way than that of going forward together along the uncertain road. There is the need not to be alone, to hold hands, to make a human chain: this is still the human basis, sentimental perhaps, of Klee’s didactics.

But other and more serious reasons impel his poetics to become didactic and to assume a methodological character. According to Klee, the manner in which the artist creates implies, above all, a didactic requirement, for it is through creation that the artist learns to recognise the world in which he exists and acts, shaping it according to the extent of his own experience. Reading the pages of his theory of form it would appear that Klee desired to penetrate to the very depths of his knowledge of the universe; he speaks of space and time, of forces of gravity, of centrifugal and centripetal forces, of creation and destruction of the being, of the individual and the cosmos. Side by side with strangely happy intuitions, with parascientific propositions, with paradoxical postulates and with a vast quantity of very valuable annotations relating to the daily routine of pictorial work, one finds recollections of readings, passages revealing knowledge (which is neither superficial nor second-hand) of contemporary currents of thought, psychology of form, theory of visibility, psychoanalysis, the philosophy of phenomenology. Certainly all this does not constitute a system, but it does reveal a complicated construction in which everything seems to find its proper place.

Nothing is further from the artist’s mind than the assumption that he is producing a scientific work, what is important to him is to specify a dimension or a perspective, to recognise the limits of space and time in which one’s own existence manifests itself, to receive the watt of the universe, from the starting point of one’s own ego, with its will to make or to shape.
Thus, he thinks, must the world appear to those who do not stand apart from it and contemplate it from outside; to those who see it from the inside, with its infinite prospects, its diverging paths which criss, with round, then open slowly along the apparently capricious curves of life's parabola; a world ever eccentric and peripheral, 'irregular,' yet nevertheless secretly obedient to certain laws, and ever striving to develop in order to find its path and break through to reality.

Thus space (and here we may note the similarity with the thought of Husserl and Heidegger) will no longer be a logical sequence of planes but above-below-in front-behind-left-right in relation to the 'I' in space; time will no longer be a uniform progression, but in a before and after relation to the 'I' in time; and as nothing is static, that which is now in front, soon will be behind, and that which is now before will be after.

Space and time are simultaneously subjective and objective; for this reason the sequence of values is endless and each value is not permanently bound to the object, but to the existence of the object in this or that point of space and time. It is bound to the recollection of its having been, to the possibility of its future being, under completely different conditions of space and time. The object itself has no certainty; it might have been and might be no longer; it might not be, but might be going to be. Since it is, absolutely, only a meeting of co-ordinate lines, a luminous point in the dark expanse of possible space and time, it could change into another object, whose trajectory may come to pass through that point. Should the unforeseeable parallel of our life pass through that point it could be that we might 'become' that object. Reality is a never-ending metamorphosis; this is a thought Klee had inherited from Bosch, and shared with Kafka.

There is, however, something which differentiates man's being and his actions, which differentiates cyclic changes of history from the unconscious changes and happenings in reality; something which, in the formal instability of metamorphosis, succeeds in isolating and defining forms and in making definite points of light.

It is the aim and the will of humanity somehow to control its own destiny, to know itself and clearly to establish its position in the confusion of chaos. Finally to 'save itself,' if this expression still means something when confronted with an empty void. Nothingness, which stretches beyond the horizons of life, impels man inevitably to find a solution here and now, within the uncertainty of the particular state of his society and of the individual within society.

The main thread which unravels itself throughout the whole of Klee's theory is the search for quality; it is in the search for quality, namely the search for one's own absolute authenticity, that mankind (as Kierkegaard would say) desires desperately to find in order to justify itself, and, perhaps, to save itself.

But it is not enough to desire this; to do or to become is life itself and it is only by acting consciously, and methodically, that one can attain some quality or value, which is also the value of existence, a full consciousness of each moment of it.

It may be said that Klee's art and theory represent an attempt to reconstruct the world according to values of quality; and since those values are not given and are embedded in layers of false experience, it becomes necessary to distil these values by a transformation which reduces to quality of the quantities. In other words, it becomes necessary to reduce progressively the conglomeration of quantitative phenomena which fills the universe and human existence, to the point of that indescendable and immemorial minimum, which in fact represents quality, and which is only to be found in all things which are real, although revealed only in meditation and in the production of works of art.

Notice how perspective, which is the typical quantitative construction of space, is elaborated in both Klee's painting and theory; note the almost alchemistic treatment through which the chromatic scores emerge from the quantitative graduation of chiaroscuro, seeking in each note not just purity of tone, but the critical point of the passage from tonal volume to quality of timbre. The true meaning of this unceasing metamorphosis is therefore this: quantities are continuously being raised to the level of qualities; and since this level is the level of consciousness, this last transformation can only take place in the mind of man. This is the humanistic foundation of Klee's art and doctrine.

The quality value will only be reached finally when the form produced, or the art object, contains within itself all human experience, the sum of human experience since the beginning of time. The work of art will be, even so, an object closed within its own finality, but it will project itself upon the spatial horizon of the universe and the temporal horizon of humanity. The work of art, since quality possesses individual character, must be elaborated by the individual, but it will acquire a collective meaning; its power will be incommensurable, its active presence will never be erased from the world. The artist's work, though it proceeds according to his own rhythm, will intervene itself with the work of all mankind. 'We wish to be exact, but without limitations'; limitation is logic and calculation which determine the mechanism of modern productive techniques, the techniques of industry. We do not wish to destroy those techniques which possess almost unlimited possibilities: we want to develop them into more subtle and penetrating techniques, harnessing both emotion and knowledge, material and mental activity.

The Bauhaus had a definite programme: to restore production, which industrial techniques had developed only in a quantitative sense, to search for quality values, in this way preserving autonomy, the creative possibility of a real existence, and, finally, the freedom of the individual in society which was tending more and more to become a compact and uniform mass. But what are those quality values? The attitude of the Bauhaus on this point was ambiguous: in the first period at Weimar, following the wake of the Werkbund, themes and procedures characteristic of the ancient craftsmanship were elaborated in an attempt to reduce traditional aesthetic values to a schematic system which could be applied to new industrial techniques. In the second period at Dessau, following the example of the Dutch group De Stijl, quality was sought in formal abstract concepts, in a mathematically rationalised form selected as the image of the supreme rational quality of the human being.
Research, however, remained dialectically linked with the question of quantity; in the first instance attention was concentrated on an attempt to preserve certain traditional aesthetic values, whilst increasing the quantity of production; in the second instance, quality was transposed to the level of conceptual abstraction, leaving to production the task of mass-producing the model. It was precisely on this point—whether to conceive quality as a mere model or as a value which manifests itself and remains inherent in the object—that there arose the famous conflict between Walter Gropius and Theo van Doesburg: this was one of the factors which caused the Bauhaus to change its programme to a more constructive level.

Klee was in fact the man who gave the search for quality a completely new basis, and made it a search for an autonomous and absolute value, which, though derived from quantity, is irrelevant to quantity itself. Quality for him was the ultimate product of the individual's unrepeatable and unique experience; one achieves it by descending into the depths and by progressively clarifying the secret springs of one's actions, the myths and recollections lurking in the unconscious which strongly influence consciousness and action.

One must reach out for the point of prefiguration, the agony of death already suffered, without which there can be no completeness of existence or experience. The world we leave behind in this descent (which is also an ascent to superior spiritual forms) is the world of quantities, the dead world of forms already used, the world of logic, of positive science, of the modes of politics, the three-dimensional world, in which everything assumes proportional and quantitative relations, the world of social classes characterised by degrees of power.

The world of qualities which opens out the more one descends into the unconscious depths, is not the world of forms already dead and stagnated, but the world of nascent forms, of formation, of gestaltung: it is the world of undying organic relations which are born of real encounters and are measured by the effective strength which each image develops in its particular condition of space and time.

And since it is no longer admissible to draw any distinction between an object which is real and one which is imaginary, each image, being a moment of experience and of existence, is no longer a fixed and detached representation but preserves almost physical vitality. The transition from lower or passive forms, traditions or habits or reminiscences which hamper man's freedom (Husserl calls them 'So-sels'), to superior forms, in which freedom has its highest expression, that is to say creation, is accomplished in the image.

This image will continue to live in the world as a representation of the moment of the individual's authentic existence, of his existence in the world. It will be the password among individuals, a vital link amongst the members of a community.

Klee never loses sight of other men, the community; he always tries to consider society as a single and multifarious individual, with its own life story, its own 'Ereignis'. Unlike Mondrian he does not conceive of an ideal society, which finally and peacefully settles down into a common acceptance of incontrovertible rational truths; he prefers to seek the reasons for common understanding in living experience, in the history and prehistory of humanity, of the 'people', instead of in utopian plans for the future.

In society, individuals appear to him to be bound together by old ties, by the spirit of clan and tribe, by a host of beliefs and fears, of myths, magical rites, superstitions and taboos; those are the ties which unite them organically to nature and the cosmos.

By understanding his own motives, the individual does not isolate himself in his own mind; on the contrary, he re-disCOVERS in the myths of the unconscious the common roots of man's being and his existence. Not only does he discover the relationships, but the unity of the one with the whole. In the world of quality, the mythical images shed all nocturnal shadows and become as clear as platoic ideas. The passive general, as Husserl would say, which collides with memory and matter, becomes active general. A new solidarity is established, independent of the objective rationality of certain accepted rules, but dependent on the discovery of a common origin and common ancestors; an origin which renews itself each moment, transmuting death into birth and giving to action a genuine creative meaning.

The vast cosmological vision evolved in Klee's theory does not supply the key to the symbolic or semantic interpretation of the images and signs which appear in his paintings; it rather explains how each one of these images, each of these signs, contains a truth which each man will read according to his own experience and will find a place for in the rhythm of his own existence, and yet retains the same value of truth for everyone. Klee anticipates Adorno's thesis of 'Alienation' and seeks the maximum 'alienation' or 'consumption' of artistic value in a maximum of quality and purity, in the elimination of all formal schemes, in the conquest of value which possesses both clarity of form as well as multiplicity and transmutability of meanings, the vitality, the capacity to associate itself with everyday life, which are characteristic of the image. The association with everyday life, the possibility of the work of art existing on a practical plane: this is another theme which links Klee's poetics with the Bauhaus didactics.

It was Marcel Breuer who perceived the real significance of Klee's teaching at the Bauhaus; to Breuer we owe the fact that Klee's world of images has become an essential component of what is known as industrial design. This tubular furniture invented by Breuer in 1928, thread-like, suspended in impeccable yet faultless equilibrium, precise and mechanical gadgets animated by a silent and vaguely ambiguous vitality, as if from one moment to another they might re-enter and dissolve into the space which they do not occupy, is certainly born of Klee's norrusse and intense graphics, and the currents of strength which it infuses into his lines. This furniture inhabits man's space like Klee's images inhabit the space of his painting and oblique perspectives, and of the mobile depths of his total layers. This furniture too is born of an invisible dynamic of space, and whilst fulfilling its function with impeccable accuracy, traces a new dimension in which relations are clarified, and values are brought to the purity and transparency of quality.
The capacity of the image or of the object-image (and every image is already an object) in no way contradicts the rational faith of the Bauhaus. If rationality is not an abstract formula, but the character of existence and human action, then the final distillation of experience which is achieved in art, in the ultimate analysis, is the work of a rational being. Klee's didactic aim and, in a wider sense, the exemplary educative meaning of all his work is to show how, through all the meditation and active creation which constitutes artistic activity, experience performs ever widening circles until finally it touches the furthest limits of the universe and returns to the point of maximum intensity, that is, the point of formation, of Gestaltung, where each sign signifies at the same time the individual and the world, the present and all time.

Klee continued teaching at the Bauhaus even after Gropius left, even when, owing to the increasing hostility of German conservative circles already mature for Nazism, life at the school became extremely difficult. Probably he felt that whilst the rationalist utopianism that had inspired the programme at the Bauhaus had already collapsed under the strain of events, his idea of a rationality without formulas, rooted in experience and aimed at redeeming the shapeless contents of the unconscious, could still survive, perhaps might be used as a fighting weapon or a defensive weapon against the outbreak of violent political irrationalism. He himself, it could not have been otherwise, was overwhelmed by events; and if in the presence of historical reality Mondrian's poetics appeared as the poetics of utopia, his own appeared as the poetics of a dream.

This appearance does not correspond to the truth: Klee's poetics are not the poetics of a dream, but the verification, point by point, of an experience which in its fulfillment does not fear to cross the threshold of dreams nor even of death, since death and dreams are still reality. When, after the second world war, the virtues and defects of the previous generation, the vanquished generation, were laid bare, and the rationalist utopia was condemned as one of the factors which had weakened resistance and paved the way for the defeat of European intelligence, it was realized that the poetics of a possible 'overcoming' of rationalism were already present in Klee's work and teaching. An 'overcoming', however, which did not imply the denial of rationality nor the disavowal of utopia, but gave ultimate scope to the functions of the rational being, representing him as a continuous process, a continuous redemption from life of lost spaces and times.

Thus even after his death Klee's poetics and didactics continued to operate in times completely different from those in which the artist had so sadly lived and in which he had placed his hopes with so much faith. Perhaps we can see it to Klee's poetics and didactics, to the fundamental humanism of Eremitus and Diderot which pervades them, that at a distance of years Wols was able to temper the ferocity of his despair with a little human pity and Dubuffet to mingle a few notes of tenderness with his social cynicism.

Giulio Carlo Argan
This book is the first full collection of Paul Klee's ideas on form and artistic creation. Those copious notes in which he set forth his thoughts on the pictorial elements, on content and on style, give us new access to his creative work. The theoretical discussions and analyses are accompanied by drawings which illustrate and elucidate the context.

Text and illustrations form an organic whole, revealing the profound harmony between his ideas and his methods of work. Klee himself said expressly that his 'discourse' should not be considered by itself but as a complement to his pictures.

Movement stands at the centre of his thinking about form—from the simple forms to the complex combinations of pictorial elements. The optical foundations of his theory of form, as here presented, provide a remarkable guide to his pictorial world.

Klee's teaching activity— which was always closely bound up with his creative work—helped him become aware of his own way of working. The logic of pictorial thinking is determined by the picture and goes its own specific way. To be an 'abstract' painter meant for him to distil pure formal relations. The aim of his teaching was to promote an 'inner' movement, to encourage the creative disposition.

"We should simply follow our bent . . . wishing to provide things one can be sure of, I limited myself to my inner being." What a magnificent blueprint for freedom, given by an artist whose many-sided theory and advice might sometimes suggest a restriction of artistic freedom. Restriction? No, in these meditations he looked more deeply into familiar views of the world, and boldly anticipated a mode of pictorial thinking which then, more than thirty years ago, seemed to lack theoretical foundation.

Creative artists have often felt the need—whether to dispel misunderstandings or to clarify their own views—by setting them on firmer ground—to formulate their insights in language. A few names may suffice—these are Klee's predecessors, whose writings he studied assiduously during his years of development: Leonardo, Philipp Otto Runge, Delacroix, Feuerbach, Seurat, and not least of all van Gogh (as late as 1918 Klee cited Feuerbach and in his theory of colours he referred to Delacroix).
Already at the age of twenty-three, Klee felt laws to be decisive, and that one should not begin with hypotheses but with examples, no matter how small. "If I can recognize a clear structure, it gives me more than any high-flying theoretical graphs; the typical will come automatically from series of examples." Seeing the architectural monuments of Rome in 1902, he was convinced that the relations of parts one to another and to the whole correspond to hidden numerical relations present in other works of art and nature; that these numbers and proportions do not signify something cold and rigid, but breathe life; and that their importance as an aid to study and artistic creation is clear. The *Heimat* of the journals from his Italian journey is "the waning, not the dreaming human spirit." His visit to Italy brought him the insight that noble style is buried in the perfection of technique. "A single summit, Leonardo," he notes, "drives me back to the noble style, but without the conviction that I shall ever get along with it."

In this period of the first clarities, he became aware of the fundamental importance of pictorial technique: "Creative art never begins with a poetic mood or an idea, but with the building of one or more figures, the harmonisation of a few colours and forms... What uninspiring things, canvas, slitting, underpainting. And nothing much more alluring about line drawing or the treatment of forms - how long will it be until I experience those things?" (for the present the art of life holds greater fascination). His first years of study in Munich and the teaching of Franz von Stuck had not brought him the experience of pictorial dimensions. "If this teacher had taught me the nature of painting as I later learned to teach it, I should not have found myself in so desperate a situation. "Apprenticeship is everywhere an encyclical into the smallest, most hidden things in good and evil," writes Klee in summary. "Then suddenly one begins to see one's way and the specific direction one must take."

In his journals from 1900 to 1918, he speaks in brief aphorisms of the artist's specific method and of the dimensions of the picture. In his course of a slow, steady development the relation between thought and creative work grew firm. He resolved to fuse formal expression with his view of the world. In his own words, he built simultaneously on the law and on the work of art - on the foundation and the house.

At exhibitions in Munich from 1900 to 1912, Klee became acquainted with the work of van Gogh, Cézanne and Matisse. After his encounter with Cézanne, he noted: "This is the teacher par excellence, far more so than van Gogh!" (1909). He was profoundly impressed by Matisse: "With the result of impressionism he turns far back to the childhood stages of art and achieves amazing effects." Klee early recognized the value of children's drawings and in 1912 pointed out that there are still primordial beginnings to art, such as we find in ethnographical collections and at home in the nursery..."The more awkward they are, the more instructive an example they offer us." (Klee diligently collected the drawings of his son Felix and other children.) "With the expressionists," he wrote, "construction has been elevated to a means of expression"; the skeleton of the pictorial organism, he said, was again receiving due emphasis. He called cubism a school of the philosophers of form. It is nothing new, he said, to think of form in terms of definite measurements that can be expressed in numbers; but now the idea has been extended to the formal elements: all proportions are reduced to forms such as triangle, square, circle. His ideas on cubism and expressionism are set out in an article which he contributed to *Die Ape* (1912), on the exhibition of the "Moderne Bund" in the Zürich Kunsthaus (he himself was represented in the exhibit with a few watercolours). In this article he raises the question: Is it necessary to do away with the object for the sake of construction? What had he in mind was a union of constructive ideas and "free breathing," Art, he held, is not a science, but on the contrary, a world of diversity.

His search was intensified by Der Blaue Reiter and the impressions of his trip to Paris (1913) in the course of which he became acquainted with the works of Henri Rousseau and Picasso. Delaware, when he met in Paris through Marc and Macke, lent him the profiles of Guillaume Apollinaire's *Métamorphoses érotiques* (in anticipation of Klee's visit, Jean Arp had sent Delaware Klee's article on the "Moderne Bund"). Klee was particularly attracted by those of Delaware's pictures which carry on a perfectly abstract formal existence without the benefit of motifs drawn from nature. For Der Sturm (Berlin, January 1913) he translated Robert Delaunay's article "La Lumière," a short summary of the basic ideas of Orphism. The cosmic phenomena of multi-dimensional contacts was revealed to him. And indeed Klee held that the actual substance of painting was to be sought in glimpses of harmony between content and colour. His aim of uniting the light relations of several objects in a condensation of colours was fulfilled in the watercolours done during his trip to Tuscia (1914).

The war found Klee in Germany, spiritually prepared: "I have had this war inside me for a long time," he notes in 1918, "so it does not inwardly concern me. Only in memory - for one does think back sometimes - do I live in that shattered world. What a remarkable destiny, to be the scales between here and there, scales on the frontier between today and yesterday. Today is the flux between the two. The great crucible of forms contains ruins to which one is still somewhat attached. They provide the material for abstraction..."

In 1916, in the midst of a period of fruitful work - a few days after the death of his friend Franz Marc - he was called for military service. He took with him a drawing pencil and painting materials.

Later he wondered whether he had gone on living quietly, his work would have advanced as rapidly as it did in 1916-17. "For a passionate drive towards transformation seems to be bound up with a great change in one's mode of life." Looking forward, he made plans for the future; his inner vision attained new depth.

Early in 1917 he was transferred to the finance office of a Bavarian aviation school in Gärkobrunn. Here he worked as a clerk and led a quiet life from which his artistic activity benefited. He did his painting in the desk drawer - this secured him against surprises. "Anchors Sunday in camp. Finance officer suddenly called away on leave. At last I worked hard, painting and drawing, and in the end I didn't even know where I was. In amusement I looked down at my crumpled pencil case... Thanks to the absence of the finance officer, I am master of the office every evening and can spread out comfortably."
Kens possessed a collection of natural objects that he used in studying the nature, appearance, and structure of the most diverse organisms. He collected algae during visits to the Baltic, pressed them between slivers of glass, and sketched the arrangements. 'Baltic Soon'. He brought seaurchins, echinoids, crinoids, and molluscs from Sicily and other Mediterranean regions. He collected butterflies and stones - crystals and petrified plants, amethyst, celestite crystals on coloured sandstones, quartzite and mica. He was interested in stratification, transparency, and colour combinations.

The reproduction shows a box from his collection, containing muscari, lichen, dried flowers, sawdust, and leaves from his studio.

VERONIS: Echinoderms (Baltic Sea).
Pen and ink.
"Baltic-plastic interpenetration."
Everything around me sickens and my work comes into being as if by itself. Ripe graphic fruits fall to the ground. I am planning to enrich my spare time by painting.

'Perhaps I shall pitch camp again in the woods and set up a fine daylight studio and take from nature a little of her spirit. How full the impression of sinfulness at noon, the knife-edge balance of existence when even breath may hardly whisper. Here all action is purely mechanical, mere appearance. Nothing matters but a long, full glance within.'

Despite outward difficulties (during which his father's house in Borne was always open to him), the war years brought the knowledge that in art it is less important to see than to make visible. What an attractive destiny, to master painting at this time; as I think this over, the phonograph grinds on tirelessly. Around it heads are spinning and diabolical masks peer in through the window. Now things are in the making, the diabolical is fused with the celestial; the dualism will not be treated as such, but in its complementary unity. The conviction is already present. A simultaneity of good and evil.'

Even before his discharge from the army, at Gersthofen, in December 1918, he completed the first draft of his Schäuflerische Konfession ('Creative Credo'), provisionally entitled 'Thoughts on Graphic Art and Art in General'. It is a study of form and content from the standpoint of the new methods. With striking clarity he sketched the foundations of a dynamic conception of form. What he had noted spontaneously but in fragmentary form in the Journals—his search for a dynamic view of the world—was for the first time expressed clearly and systematically in the 'Creative Credo' (1920).

Here he set down the insights that were to provide the foundations of his work end of his thinking. He was preoccupied with the idea of a duality of concepts joining to form a unity: movement and counter-movement order themselves in meaningful harmony and become functions in pictorial space. Every energy demands its complement through which it achieves a state of self-contained rest above the play of forces. To this state of rest corresponds the 'simultaneous conjunction of form': motion finds its fulfillment in the equilibrium of rest. He was encouraged to write this essay by Kandinsky's article 'Malerei als reine Kunst' ('Painting as a Pure Art') which had appeared toward the end of the war (September 1918) in Herwarth Walden's manifesto 'Expressionismus—die Kunstwende' ('Expressionism—Art at the Turning Point'). In the same month he noted in his diary: 'An excellent, outstanding article. It is at once so simple and so full of the light of intelligence. The purest clarity, utterly convincing. And still people clamor for clarification: Why, a medium such as "The work of art itself becomes the subject" says everything there is to say.'

Freed from the pressure of the war, Klee was filled with an uncontrollable desire to work. In 1919 he was in a position to say in a letter to Oskar Schlemmer: 'Anyone who has seriously considered himself with art in the last few significant years is bound to know perfectly well who I am.' The statement was justified. The enthusiastic approval of Theodor Däubler, expressed in a number of articles, had greatly encouraged him. Other voices followed. In 1920, Leopold Zahn and IL von Wedderkop published their monographs. In 1921 Wilhelm Hauserstein put out his Kästchen, oder eine Geschichte vom Maler Klee and von der Kunst dieser Zeit. These books met with an extraordinary response.

Hauserstein's poetic and highly expressive work in particular attracted the young people to those new worlds of form.

Meanwhile Klee had moved his studio from the Minischützer Amselwegstrasse to the little Schloß Suwannes in the Wernertstrasse. He made music with his friends—Klee's predilection for Bech and Mozart is mentioned several times in our text. Kubin, Carossa, and Wolfskehl came to see him. He was in contact with Rieke who from Soglio in the Brugiaglia sent him a print of the "Ur-Gärbsche" with a personal dedication.

Now that Klee was beginning to be more widely known, the question of a teaching position presented itself. Oskar Schlemmer, chairman of the Student Committee of the Stuttgart Academy, backed by a number of friends, members of the so-called uacht Group, tried to put through his appointment as Klee's successor. A violent controversy resulted. The students threatened to strike and issued leaflets. One of these, written by Schlemmer and Willi Baumeister, bore the characteristic title: 'Criticism as the Art of Lying.' One of the arguments against which they had to defend Klee was that so dreamy and ethereal an artist could not be a teacher. Klee's application was unanimously rejected by the faculty on the ground that 'Mr. Klee's work as a whole reveals a playful character, in any case not the powerful impetus towards structure and composition that the new movement rightly demands.' The reply was signed by Prof. Heinrich Alther, director of the Academy.
While his application was still pending, Klee 'wrote in a letter to Schrenker (2 July 1919):
"... I should like to make it clear at the very start that my willingness springs from the realisation that in the long run I shall not, with a clear conscience, be able to avoid taking a profitable teaching position. The essential, it seems to me, is that you insist on the necessity of appointing an artist whose art is alive and sufficiently in keeping with the spirit of the times to serve as a guide to youth."

In October 1919, without preliminaries, Klee received a telegram signed by the 'masters' of the Bauhaus, Gropius, Feininger, Engelmann, Marcks, Muche, Ilies, and Klemm. "Dear Mr Klee, We unanimously invite you to join us in Weimar as a master of the Bauhaus." Klee had been attracted to Stuttgart by the student body's support of his appointment. Here again this condition was fulfilled. Walter Gropius assured Klee of full freedom within the framework of the Bauhaus plans, and wrote him: "The students are overjoyed at the idea that you might come to us. All of us are expecting you affectionately. We are looking forward to a quick Yes. I have been waiting a whole year for the moment when I could send out this call. Perhaps it would be best if you should come to see us at once, so that we can talk everything over on the spot. It would be splendid if you should decide to come. Then we shall be able to develop the strong atmosphere we need, more quickly than we had thought." Two of the masters had just resigned. Gropius confided in Klee: "It goes without saying that the blow has produced a kind of fever, but we feel strong, and the government seems to be with us against the philistines. Now it will be possible for our undertaking to become something pure and I think great. We must beg you to come soon, because otherwise the maggots will start digging again, and for a number of other reasons."

Two days before Christmas 1919, Klee received government approval of his contract with the Bauhaus. "I am glad", Gropius wrote, "that all the difficulties have been overcome. Your studio will be painted in the next few days, so that we may be ready for you at the beginning of the New Year."

At the beginning of 1920 Klee described his first impressions of Weimar to Lily, his wife (1 January): "Last night I moved into the "Haus zur Sonne" on the Horn ... a real country house on the heights above the town. My way to the studio goes through the gardens past Goethe's summer-house, across the lawn and up to the ruin ..." (13 January): "I am pretty well settled at the studio and was able to start painting today. The large room is still quite empty; it measures 10 by 11 feet and has good walls for pictures. I have not bought any furniture yet; I have been able to pick up the most necessary items at the Bauhaus - as in the Army." Three days later (16 January) he described the atmosphere of the Bauhaus: "Yesterday I devoted my time to the Bauhaus and was shown around for the first time. In the morning one of the masters was working with the preliminary class. When I went in at 10 o'clock, they were having a break. The master, in a wine-red suit, was standing with a group of boys and girls who were showing him their work. He gave one group a written exercise to do on the words of Die Mienenen satz on a slate. They were not to write until they could clearly feel the spirit of the song. But these were more advanced students, not the actual beginners."

Paul Klee, 1919 (at) Prasselenhoven in the Sonnenberg.
"Then the break was over. We went into the next studio, an immense room. One wall was lined with racks of experimental studies showing the properties of different materials. They looked like hybrids between toys and the art of savages. Along the other three walls students were sitting on three-legged piano stools, with tables in front of them. The stools were red, wooden with iron legs. Each student was holding an enormous piece of charcoal; before him he had a drawing board and a sheet of scrap paper. After a few turns around the room the master went over to an easel holding a drawing board and scrap paper. He seized a piece of charcoal, his body contracted as though charging itself with energy, and then suddenly he made two strokes in swift succession."

"Two strong lines, vertical and parallel, appeared on the scrap paper. The students were asked to imitate them. The master looked over their work, had a few of the students do it over again, checked their posture. Then he ordered them to do it in rhythm and then he had them all practise the same exercises standing. The idea seems to be a kind of body massage to train the machine to function with feeling. In very much the same way he drew new elementary forms (triangles, circles, spirals) and the students imitated them, with considerable discussion on the why of it and the mode of expression. Then he said something about the wind and told a few of them to stand up and express the feeling of being in a storm. Then he gave them their assignment: to draw the storm. He gave them about ten minutes, then looked over the results and criticized them.

"After the criticism they went to work; one sheet of paper after another was torn off and dropped to the floor. Some of the students worked with great gusto and covered several sheets at once. When they were all tired, he let the preliminary students take the assignment home with them for more practice.

"At five in the afternoon a class in "analytika" was held in a large room resembling an amphitheatre. It is a kind of lecture hall, except that the audience sits not on benches but on the steps. In the pit stands a blackboard with a sheet of scrap paper. Way up on top a projector. Again the master moved about, getting things ready and loading the projector. Then he showed slides of formal elements which were intended to lead up to Matisse's
That spring, Klee began to work at the Bauhaus. (14 April): "Tomorrow I am looking over the bookbinding and also posting up a course in practical composition." Speaking of this class in bookbinding (with only four students) he wrote hopefully: "Perhaps in time I can put a little life into it. Up to now the work has been good and solid, but I have seen no trace of a new spirit." Klee began his lectures in May of the same year. His first lecture series attracted forty-five applicants, of whom thirty were accepted. He reported to Lily at length on his first class (13 May): "Today I held my first class, and something extraordinary happened. For two hours I spoke freely with the students. First I discussed the few paintings and watercolours by W. and others. Then I passed round ten of my own watercolours and discussed them at length from the standpoint of their formal elements and composition. The only trouble is that I was thoughtless enough to deal with the material so minutely that I shall have to prepare some new examples for next Friday. Or perhaps the students will have submitted some more work by then. Just as I was illustrating the relativity of the concepts "light" and "dark" by the excellent example of both different temperatures, there was a knock at the door and in came a policeman who gave one of the students a good scolding in Saxon for not reporting to the police. He was greeted with a good deal of merriment as you can imagine, and you can also imagine that as shepherd of a flock so undeterred by the dignity of the law, I found myself caught between two fires." Klee went on to write that in the same summer semester he would analyze a pair of paintings for their polyphonic style, using four or five examples. 'Perhaps in spite of the Bauhaus Exhibition the students will contribute something; otherwise the course will just have to be a bit shorter this time.'

Klee quickly adapted himself to the ways of the Bauhaus. His schedule (seven or eight hours a week comprised: his two-hour lectures on theory, the afternoon form workshop—the problems assigned are included in our text—and a class in creative painting, during which he often spoke about his own pictures. In addition, he first taught glass painting and later on weaving.

While the 'Contributions to a theory of pictorial form' were in the making, he wrote to Lily: "Here in the studio I am working on half a dozen paintings, drawing, and thinking about my course, all at once, for everything must go together or it wouldn't work at all. It is this natural way of doing things that gives me strength. The life and bustle of Weimar do not suit me. I work and never speak to a soul." In 1924 twelve students attended Klee's theoretical course; in Dessau he had over thirty students, although not all of them went to his painting class. In connection with Klee's lectures—a systematic discussion of his experience of painting and life—one student declared: 'His teaching was never instruction in the conventional sense. The full expanse of his thought and experience was accessible only to those who participated in the fullest sense.' In his painting class the students had to explain what they were trying to do. Klee would pick up a slate and draw the desired effect.

The aim of his teaching was to reveal the life-giving element in artistic creation, to illustrate it by dynamic arrangement, and to formulate the laws of art as simple rules. 'Education', said Klee, 'is a difficult chapter. The most difficult. The education of the artist above all. Even if one supposes it to be continuous, even if one supposes that there might be a certain number of real educators, many remain within the realm of the visible, because it is enough for them. Few got to the bottom and begin to create. Most stick rigidly to theories because they are afraid of life, because they dread uncertainty.'

In his first years at the Bauhaus, Klee prepared his two-hour lectures in every detail. In November 1921, he wrote to Lily: 'The lecture went quite smoothly yesterday. I was prepared to the last word; this way I don't have to be afraid of saying something that is in any way irresponsible. From the principles of perspective I went on to the sense of balance in man. In the next practical exercises we shall be working with balance, making static constructions with stone blocks, and then we shall work from these models.'

From his notes—he called them 'My contribution to fundamental principles and the theory of form'—we can reconstruct his teaching activity over a period of some two years, with the help of dates and schedules. The backbone of his course was provided by the lecture notes contained in 'Contributions to a theory of pictorial form', which are published here in their entirety. They cover three semesters, from winter 1921 to winter 1922. Klee himself published a short excerpt from this text in Dessau in 1925; entitled 'Dargestellungen Skizzenbuch' ('Pedagogical Sketchbook') (Vol. 2 of the Bauhaus Bücherei). He achieved immediate fame. The little volume bore the sub-title: The Original Foundation of Part of the Theoretical Programme of the Bauhaus at Weimar. In the present work this partial text is followed by the complete text of the lectures on theory.

The body of his doctrine of form came into being at Weimar and at Dessau over a period of barely five years (1920-25); it was later amplified to meet new problems and adapted to his teaching requirements; new sections were added. Klee left more than 2,500 folio pages of pedagogical notebooks (consisting of memonara teaching projects, constructive drawings, and studies for his pictures) from which it has been possible to collate additional courses of instruction. These are chiefly concerned with amplifications of the theory of perspective, a subjective theory of space, shifting viewpoint, composition, rhythms and rhythmic structures, and statics and dynamic synthesis. This material provides us with many new adorns. In editing these complementary sections I have kept to the outlines drawn up by Klee himself. These new methods made it possible to undertake analyses which show the functional process of motion to be the dominant centre of the picture's content.

For the Bauhaus Report that appeared in 1923, Klee wrote his basic Weg des Naturstudiums ('Ways of Nature Study'). This publication, the Jena lecture of 1924 and the essay Exakte Varsuche im Bereich der Kunst ('Exact experiments in the realm of art') 1923 are included in our chapter 'Towards a theory of form-production'. The Jena lecture constitutes a kind of programme for his entire thinking on the subject, which is illustrated here in a wealth of concrete examples.
This juxtaposition of formal examples developing into finished pictures and of theoretical texts is systematically carried out here for the first time. It is in keeping with Klee's plans, many of which were found in his papers after his death. In 1925 he began himself with the preparation of a Pictorial Mechanics, or Theory of Style, which had been several times announced by the Beuthaus.

We have tried to bring out Klee's concern for multi-dimensional simultaneity with the help of typography - that is, by our arrangement of his form studies and creative work. Our intention has been to give the dynamic forms their full expressive value through adequate use of empty space; and thus to guide the reader directly to the pictorial action.

In the manuscripts, carefully executed gouaches and pen and ink drawings alternate with quickly tossed-off pencil sketches. Klee's lecture notes include constructive drawings, often geometric exercises serving to elucidate pictorial laws (he drew his illustrations on the blackboard).

For purposes of reproduction it has been necessary to copy certain of the schematic pencil sketches. These copies are easily distinguished from Klee's original sketches and constructive drawings with their delicate calligraphic lines.

From year to year Klee modified the subject matter of his lectures. In connection with his pictures he wrote: 'Whencever, during creation, a type outgrows its genesis and I arrive at the goal, intensely disappears and I have to look for something new. In production it is the way that is important; development counts for more than does composition.'

And just so for his thinking.

In working out new lines of thought, one requirement was crucial for him: not to fixate one point but to leave his mind's eye absolutely free. This accounts for the corrections and additions to his manuscripts. Marginal notations and subsequent deletions are indicated in our notes. The peculiarities of language due to his oral delivery and Swiss dialect have not been changed.

In the course of his formative years, Klee noted: 'Busy as a bee collecting forms and perspectives from nature'. At the Beuthaus his nature studies underwent a change: the emphasis was now on the observation of functional processes and motion. 'First give space and form to the smaller living functions, and only then build houses round them, as in the apple, the snail shell and the human body.'

He tried to find out how form arises in nature. The honeycomb or the wider cycle served him as a theme for variations. Simple crafts such as plaiting, weaving, sawing, masonry showed him the 'original, primordial roads to form', and answered his question of how form comes into being.

While still in Weimar he wrote to Lilly (1914): 'I am looking forward to the herbatorium and am surprised that these treasures of form didn't reach me long ago'. He made use of all sorts of structures, such as seed pods and flowers, to investigate the relations between kernel, inner space, and actual shell. In longitudinal sections and cross sections, in the interpretation of base and elevation, he explored their structure, combined many aspects of the material world, and blended them into new form. From fragmentary insights into the world of form, intricate new organisms developed. Klee wrote: 'When several aspects interpenetrate, the structures must be capable of life. The harmony between
Inside and outside is not a formal problem, but a question of psychic unity of spiritual content.’ In Klee’s teaching the transformation of forms is revealed part by part, step by step. Interpretation and creative activity remain closely linked.

In considering a work of art, he asked whether it reflected the essence of the object or only its outward, optical manifestation. A reference to human movement or plant growth may suffice. The complex development from seed to flower raises the question of how growth as a texture of dynamic occurrence can be represented ‘in its essence’. Dynamic processes assume increasing importance in his thinking about form. Human movement passes from walking (taken as a norm) to jumping, hopping or sliding, ending in the violent inner agitation of overall spiritual activity.

In the type of mobility (static and dynamic) Klee saw the stylistic criterion by which to differentiate forms (he investigated the general laws of motion on earth, in the water, in the air). These insights considerably changed his feeling for form and space. Balance and statics gave way to a dynamic ordering of the pictorial elements. Colour in its most violent tensions and subtlest dynamic relations became the vehicle of the dynamic unfolding of space. In his late work extremes of action are held together by brilliant fundamental chords. ‘Contrasts exist only in relation to the formal part; unity is restored by means of the colour values.’ In his creative work statics and dynamics are consciously emphasized as the core of his artistic method.

In the course of his ten years at the Bauhaus, Klee applied well-nigh endless knowledge to his investigation of the laws of painting. For him everything that happens in a picture must have its logical justification. He termed his exercises in planimetry and stereometry ‘constructive ways to composition’. He applied his understanding of growth and motion, won during nature study, to the realm of geometry. He investigated basic forms from the same point of view as plants and living creatures: according to their faculty of motion, their behaviour, and their essence. As a result of kinetic changes, simple forms assume a variety of personalities – for example: ‘the death of the triangle’. In his thinking geometrical abstraction is humanized.

An active exchange goes on between the two fundamental modes of experience, the constructive-geometrical and the metaphysical. ‘The possibilities become numberless and infinitely variable.’

The Bauhaus faced increasing opposition in Weimar. In November 1924, Klee wrote to Lily: ‘We are engaged in feverish activity to cope with the great crisis, expected in about a week . . . Possibly the “gallows birds” will climb down the ladder to catch their breath; and possibly they will be sent back up again. No decision. The affair seems to keep dragging on.’ At length plans were made to move the Bauhaus to Dessau in 1925. Meanwhile Klee had his first exhibition in New York (1924) and participated in a surrealist group show in Paris (1925). Aragon, Crevel, and Eluard translated his pictures into surrealist poems and spread his name far beyond the sphere of influence of the Bauhaus.

In the course of his years at Weimar and Dessau, Klee travelled a good deal and gained impressions that exerted a lasting influence on his work and his sense of form. Noteworthy are his experience of the Ravenna mosaics (1928), of the prehistoric hieroglyphs inscriptions of Carnac (Brittany, 1928), and his famous trip to Egypt in the winter of 1928/1929.
"Dynamics based on the square and the triangle, in part related to the circle."

[2] 'First position of the axestile from the dynamic point of view.'
He visited Segreta and Agriponte in Sicily several times. On his return to Dusseldorf (1930) he wrote: ‘Nothing is happening to me here and I do not want it to; I prefer to be within me the mountains and the sun of Sicily. Those are all I can think of - in terms of abstract landscape and new something is beginning to take shape. For the last two days I have been painting again. Everything else is savourless. The German November is the preparation for the great northern festival, full of promise, but itself quite without direction.

In Dusseldorf, Klee often admitted that it was difficult for him to go on combining creative work with his Bauhaus teaching. In 1930, he entered into negotiations with the Dusseldorf Academy, which bore fruit the following year. W. Koechlin wrote to Klee that he had helped with Klee’s help to save a professorship for the Academy. ‘In the forthcoming reorganisation it will be borne in mind that three of my teachers of painting have had no students for years… ’ The outcome rests with you. The freer, the happier you feel, the better it will be, in my opinion, for the institution at which you teach.’

The call to take over the class in free painting at Dusseldorf reached Klee in the summer of 1930, just as he was leaving for the Engadine.

On the occasion of Klee’s departure from Dusseldorf, Kandinsky wrote in the Bauhaus magazine (1931): ‘My colleagues have asked me to put out this issue: I wish it were for the opposite reason, not departure but return. His words and acts, his own example, have done much to develop positive aspects of the students’ character. We can all of us learn from the example of Klee’s tireless devotion to his work. And indeed we have learned.’ At the Dusseldorf Academy, Klee devoted himself chiefly to correcting the work of his painting class. His new works and the efforts of his students were discussed and criticized at informal gatherings in his studio. From this time on, written comments on the creative process became infrequent. His spoken comments based on part on analyses of his own pictures, were taken down in shorthand by Petra Poltgper (Klee himself made considerable use of these theoretical notes in the last years of his life, in Berne). We have worked up parts of these notes that clarify Klee’s ideas and used them to round out two sections of the theoretical introduction. Klee’s statements on his own works - dealing with content and creative method - are inserted in small print and in quotation marks.

Klee was dismissed in April 1933. The explanation given him was that it was necessary to restore the independent character of the art schools. In December he gave up his studio; since his dismissal he had not sat for the Academy. It was an eventful year: his house was searched by the police; his works were exhibited as examples of degenerate art; he visited Porquerolles, met Picasso in Paris; and before Christmas he returned to Switzerland.

He went to Berne, where his father, Hans Wilhelm Klee, and his sister were living in the family house in the Oberburggasse. ‘Berne was my true home and attracted me as such,’ Klee wrote: ‘It was clear that I would return to it’. He lived on the Kistlerweg, in a quiet suburban quarter, surrounded by gardens. Here began the magnificent development of his Berne period.

In the evenings - illness and the work that brought deliverance - are reflected in letters from the Bauhaus painters. ‘Dear friend,’ wrote Kandinsky in 1930, ‘it seems to be your turn and...’
With sovereign restraint he said of his theory: "It is a device for achieving clarity." The main thing, he said, was not to inculcate constructive or schematic foundations (these must spring from the student's own equipment, his insight), but to keep the creative process alive. A living art must break away from theory and achieve new order in organic fulfillment.

"Don't learn this by heart. Everyone is bound to feel at home in some part of this chart," said Klee not without irony in 1902, as he expounded one of his philosophic-artistic tables to his students. He warned them of the impoverishment that can come from rules, and explicitly condemned "formalism - the new academy". The sovereign aim of his teaching was to disclose the right extent of freedom. He summed up his vision in these words: "Man is not finished. One must be ready to develop, open to change; and in one's life an exalted child, a child of creation, of the Creator."
In the outside columns Paul Klee's texts and lectures are printed in large type. The inside columns contain, in smaller type, written and spoken remarks of Klee in quotation marks, and notes by the editor.
1. Infinite Natural History

Cosmos-Chaos

<table>
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<th>Cosmos</th>
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Chaos as an antithesis is not complete and utter chaos, but a locally determined concept relating to the concept of the cosmos. Utter chaos can never be put on a scale, but will remain forever unweighable and unmeasurable. It can be Nothing or a dormant Something, death or birth, according to the dominance of will or lack of will, of willing or not-willing.

The pictorial symbol for this 'non-concept' is the point that is really not a point, the mathematical point. The nowhere-existent something or the nowhere-existent nothing is a non-conceptual concept of freedom from opposition. As we express it in terms of the perceptible (as though drawing up a balance sheet of chaos), we arrive at the concept grey, at the fateful point between coming-into-being and passing-away: the grey point. The point is grey because it is neither white nor black or because it is white and black at the same time. It is grey because it is neither up nor down or because it is both up and down. It is grey because it is neither hot nor cold; it is grey because it is a non-dimensional point, a point between the dimensions.
The cosmogenetic moment is at hand. The establishment of a point in chaos, 1 which, concentrated in principle, can only be grey, lends this point a concentric character of the primordial [2]. The order thus created radiates from it in all directions [3].

When central importance is given to a point: this is the cosmogenetic moment. To this occurrence corresponds the idea of every sort of beginning (e.g. procreation) or better still, the concept of the egg.

In bold outlines the whole, and, in between, the earthly man

Everything (the world) is of a dynamic nature; static problems make their appearance only at certain parts of the universe, in ‘adjustments’, on the crust of the various cosmic bodies. Our faltering existence on the outer crust of the earth should not prevent us from recognizing this. For we know that, strictly speaking, everything has potential energy directed towards the centre of the earth. If we reduce our perspective to microscopic dimensions, we come once more to the realm of the dynamic, to the egg and to the cell. Accordingly, there is a macroscopic dynamic and a microscopic dynamic. Between them stands the static exception: our human existence and its forms. In other words ‘we’, - an episode within the whole, an episode subject to ethereal compelling necessity. We are constrained by the plumbline, an imperative that trembles in the directions of egg and death. The static imperative of our earthly being.
‘Ab ovo’ – spatio-corporal:
Parts: 1. The primitord cell set in motion by fertilisation (discharge of tension with a complementary) and growing.
2. Linear space (in the egg, broken into yolk and white).
4. The surrounding space (outer space).
The whole: spatio-corpo-space.1

1That is a seminal body in its totality. 
Cf. 1871/181, ab ovo, Grabmann, p.146
and 1922 An E, Viertel’s mask. Oil. 
Illustration No.11 in Courbion. 
Klein, Munich, Paris 1933.

The protogenesis of form

When a linear form is combined with a plane form the linear part takes on a decidedly active character and the plane is passive character in contrast. If this is carried back to the first genesis of form it leads to the phenomenon of cell division. Here divided plane?

Taken productively the same process signifies growth, and taken destructively, death. Taken abstractly, i.e. detached from life, pictorial events should be evaluated according to their productive capacity. 
The active part, the line, can accomplish two things by its impulse: it may divide the form into two parts, or it may go still further and give rise to a displacement.
1 Natural order: Concept of illumination in nature (light form).

The natural unorganized, random, or disordered. The insurmountable subtlety between white and black. The natural confluence of light and dark tonalities, a vibrato between light and dark. Opposites merge with one another (light form). Only in movement is richness of shade possible. To attain greater precision you must become the observer.

2 Artificial order: Analytical sub-division to make light and dark measurable.

Sub-division of light-dark movement on a scale of a regulated tonal mixture. The middle steps of the scale need latitude if they are to become perceptible and measurable. This ends stay apart of their own accord. "The peaceful character of compromise." 

Cf. 1922/79: Separation in the evening, p.11.

I begin logically with chaos, that is the most natural. And I am at ease, because at the start I may myself be chaos.

Chaos is an unformed state of things, a confusion. "Cosmogenetically" speaking, it is a mystical primordial state of the world, from which the ordered cosmos develops, step by step or suddenly, on its own or at the hand of a creator.

Natural movement from white to black is not unregulated, but particular. It is regulated by comparison with chaos, in which light and darkness are still indistinguishable. It has the natural order of an unbroken flux from one pole to the other. This movement or distribution of tension is infinitely subtle. The minute particulars can scarcely be distinguished. A definite orientation is not possible. Position cannot be sharply fixed, because the flow, the subtle flow, takes certainly, gently but surely, away with it.
Natural order in the cosmos, i.e. the natural balance of nature. The partial field from light to dark moves up and down between the poles of white and black. In nature it is assuredly white that can lay claim to the most primordial activity. White given in nature is light itself. In the beginning resistance is dead and the whole is without movement or life. We must bring black and summon it to battle against the formless strength of light. Thus we use offensive and defensive energies together or in turn. A living balance between the two poles - this is the task we cannot avoid. The penetration of nature based on black and white [1]. The concept of balanced opposites.

In the 'natural order' white and black are opposite poles. One may also say that the tip of the black base (clear and top) extends into the white base (source of light) and conversely. Illumination (maxim law) hazy and darkening are subject to continuous inter influencers in nature; the rhythm of day and night. Their order and incorporation are at a nature level.

Artificial order. Isopxs. But clearer and more comprehensible. Articulation of the movement from light to dark in measurable passages from pole to pole. What first interests us in the scale of tone values is the abundance of possibilities between the two poles. Raising from the bottom towards the source of light, we feel an increase of so-called intensity and breadth between the poles. Below, dark juxtaposition and rivalry. In between, the half shade of under water, and above, the lines of brightest brightness.

On the scale the middle steps may be distinguished by weight or critical evaluation. The practical task is this: to fix them in the scale by mixing them or glazing them [2].

In the 'artificial order' the different degrees of white and black (or darkness) extend from brilliance to shadow or Conversely are apparent for their segment or destination in black and white. The intervals are equal in measure but different in weight. Lighter = lighter, dark = heavier. The axis divides the light-dark territories artificially, to make them measurable to measurement. Artificial measurement attributes exact numerical values to the steps and so gives us a synthetic method of representing the scale of tone values.

<image> Movement and countermovement as a process of compensation between opposites

<image> Movement and counter movement (blue and yellow) bring a clash of opposites. The gradations of tone value lead to confusion 'in a yellow stream between black and white. Then bright colour may be a deviation from the norm.' In Separation of the evening, 1922 the accent is on the upper of the dark base norm. The darkness moving down is dominant.
Examples of the artificial measurement of increase or decrease:

3. Papyrus changes: Increase and decrease on the same scale.


Crescendo and diminuendo between the poles of white and black striking up and down with accelerated tempo or slipping on and off with retarded tempo on the scale.
A concept is not thinkable without its opposite. The concept stands apart from its opposite. No concept is effective without its opposite.

On contrasting concepts (pairs of concepts):
Chaos — Cosmos
Disorder — Order

There is no such thing as a concept in itself; generally speaking, there are only pairs of concepts. What does "above" mean if there is no "below"? What does "left" mean if there is no "right"? What does "behind" mean if there is no "in front"?

Every concept has its opposite, more or less in the manner of:
Thesis — Antithesis; the line between them is long or short according to the extent of the opposition.

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<table>
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<tr>
<th>Very good</th>
<th>Good</th>
<th>Less good</th>
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The opposing positions are not fixed; they may slip past one another. Only one point is fixed, the central point in which the concepts lie dormant.

Relatively fixed (in relation to the central point) are opposing points of equal intensity.
Good and evil. Concept and countercor-cept. Thus I would supply a particle and then, over and over again, another particle, nothing more. For of course I knew quite well that the good must always come first, but that it cannot live without the bad. In every individual I would therefore order the relative weight of the two parts in such a way as to provide a certain degree of compatibility.

Dualism is treated not as such but in its unity. Rest and unrest as the alternate elements in the painter's procedure.

The concept of artistic creation

"The creation of a definite movement and countermovement from the centre of a plane. The norm is the centre."[1]

1. In all the norm is static, it becomes isolated and non-normative.[2]

2. According to a note by Klee: Gestalt = living form.

Form = mature truth.

The study of creation deals with the ways that lead to form. It is the study of form, but it emphasizes the paths to form rather than the form itself. The word Gestaltung suggests as much. "Theory of form" (Formabfolge), as it is usually called, does not stress the principles and paths. "Theory of formation" (Formaufnahme) is too unusual. Moreover, Gestaltung in its broader sense clearly contains the idea of an underlying mobility, and is therefore preferable.

For another thing, "Gestalt" (over against form) means something more alive. Gestalt is in a manner of speaking a form with an undercurrent of living functions. A function of functions, so to speak. The functions are purely spiritual. A need for expression underlies them.

Every expression of function must be cogently grounded. Then there will be a close bond between beginning, middle, and end. They will be joined by necessity, and there will be room for nothing doubtful, since they fit so tightly.

The power of creativity cannot be named. It remains mysterious to the end. But what does not shake us to our foundations is no mystery. We ourselves, down to the smallest part of us, are charged with this power. We cannot state its essence but we can, in certain measure, move towards its source. In any case we must reveal this power in its functions just as it is revealed to us. Probably it is only a form of matter, but one that cannot be perceived by the same senses as the familiar kinds of matter. Still it must make itself known through the familiar kinds of matter and function in union with them. Merged with matter, it must enter a real and living form.

This freedom in nature's way of building form is a good school for the artist. It may produce in him the same profound freedom, and with it he can be relied on to develop freely his own path to form.

Genesis as formal movement is the essence of the work of art. In the beginning the motif, the harnessing of energy, space. Work as form-making in the material sense: primordial feminine. Work as form-deciding sperm: primordial masculine.

The choice of means should be undertaken with great restraint. This, more than profusion of means, makes for orderly intelligence.

Material means (wood, metal, glass, etc.): massive use of material means is above all to be avoided here.

Ideal means, (line, tone, value, colour): ideal means are preferable. (They are not free from matter; if they were, it would be impossible to write with them.) When I write the word wine with ink, the ink does not play the primary role but makes possible the permanent fixation of the concept wine. This ink helps us to obtain permanent wine. The word and the picture, that is, word-making and form-building, are one and the same.
3. Genesis of form. Motion is at the root of all growth

Causality: the point that sets itself in motion

What was in the beginning? Things moved so to speak freely, neither in straight nor crooked lines. They may be thought of as simply moving, going where they wanted to go, for the sake of going, without aim, without will, without obedience, moving self-evidently, in a state of primal motion.

There was just one thing—mobility, the prerequisite for change from this primordial state.

I can’t prove that this is how it was; I hope it was; at any rate it is conceivable, and what is conceivable is fact and useful. It is useful as a counterconcept, the opposite of what seems to have happened afterwards, change, development, fixation, measurement, determination.

Moreover, it can be used because it can be formally expressed in terms of contrast.

The point is not dimensionless but an infinitely tiny elemental plane, an agent that carries out no motion; in other words, it is at rest [1].

Apply the pencil and shortly a line is born [2].

The point as a primordial element is cosmic. Every seed is cosmic. The point as an intersection of ways is cosmic [3].

As a point of impact the point is static [4].

Tension between one point and another yields a line [5]. Not yet discharged (abstract) [6].

Discharged [7]. The universal cause is therefore reciprocal tension, a striving for two dimensions.

Two points ideally related in tension to a line. Result: an arc [8].

Given equal velocities, the propagation of points along a line results in a meeting in the middle [9].
How a reality is generated by causality

"We noted elsewhere: 'For it was where the beginning is... that is paramount to being fruitful.'

The point sets itself in motion and an essential structure grows, based on configuration. The end is only a part of what is essential (the appearance). True essential form is a synthesis of figuration and appearance.

Starting from an origin a) (seed), ways are laid out under influence from outside and in, b) and c)."
The point, seen dynamically, as agent: the growth of energy concentrated on one side determines the direction of motion. When a point is given central value — this is the cosmicogenic moment. This event encompasses the whole concept of beginning. Soma, radiation, rotation, explosion, movements of fireworks, sheaves.

Synthesis of figuration and appearance
Centrally irradiated growth
Growing in partial cross section and in longitudinal section

Centrally irradiated growth.
It grows as if along a single dimension, on all sides at once; it grows according to the size of the former whole (primary motion).

Plants: growing in partial cross section [1].
Growing in longitudinal section [2].
Plant growth in longitudinal section is partial and centrifugally oriented.¹
Might be called "feminine" [3].
Plant growth in diametrical section is wholly and centrifugally oriented.
Might be called masculine [4].
Syntheses of plant growths in cross section and longitudinal section [5, 6, 7].

Rotation at different velocities, on a combined base.
The motion is based on a variety of centres and circles.
4. Figuration is connected with movement

I begin where all pictorial form begins: with the point that sets itself in motion.

The symbols for pictorial dimensions

1. The point (as agent) moves off, and the line comes into being - the first dimension [1]. If the line shifts to form a plane, we obtain a two-dimensional element [2].

2. In the movement from planes to spaces, the clash of planes gives rise to a body (three-dimensional) [3].

3. Summary of the kinetic energies which move the point into a line, the line into a plane and the plane into a spatial dimension [4].
Graduated accentuation of the line (lines made stronger or weaker).
Productive growth of selected line with graduated accentuation (flux) [1].
Productive growth of the point (concentric waves). Two-dimensional structure emanating from nuclear strata [2].
Linear accent on nerves, or incarnation of the line (the linear body becomes broader in growth).
Incarnation: the middle line as skeleton [3].
The line as limit for progressive growth, flow, inner content [4].

Incarnation represented in terms of causal reality. The constructive propagation of lines strictly adjusted to the threads of construction [5].

The line articulated in terms of measure or line (growth, motion, divisibility) [6]. Structure classified in its essentials [7].
Dynamic density;
Discharge of tension from within or additive (harmonized progression of a dimension of motion, enrichment by spatial emphasis).

The tension spreads in two directions
Motion, regular or irregular (progressive)

Result:
Diagram of dynamic density in two directions, inwardly progressive, marching in the directions up-down and left-right.
(Channeled progression of two dimensions, simultaneous outward and inward pull.)
Things or body – active, locality or space – passive (tensions between bodies and space).
Diagram of the dynamic formation of the circle.
The radius grows from the inside out in pure progression.

Another diagram of the dynamic formation of the circle by radiation.
Radiation comes from the centre and is related to the innermost point.

Illustrations:
Variant on "towards the innermost".
Inner dynamic density.

Variation of rotation extension into space.

Diagram of the dynamic formation of the triangle in a variation with rotary movement.

Progressively spatial [1].
Progressively pushing from the centre to the limits [2].
Outside and inside in corporeal-spatial combination (progressively inward and medial) [3].

Stratification is defined by the relation that outer bears to inner.
Inside and outside, as concepts, are either relative or limiting.

1823b) More perceived in text. Pen and ink.
The basic forms, their tensions and inner relations

The basic forms from the point of view of their causal determinants.

In this representation, which is necessarily based on a consideration of the inner essence, the circle is the encompassing, the universe, the cosmos. The square is an exception, based on the horizontal-vertical. The triangle is closer to the circle, a part of it, and the diagonal relates the two. From here there might well be a bridge to a theory of style.

The tensions underlying the basic forms considered according to their inner coherence (inside and out).

How did it come about?

What is the 'cause'?

The universal cause is reciprocal tension, a pull in two directions at once.

A straining from all sides: exertion

Centripetal: toward pull

The tension discharged, accomplished

Basic movement of domination

The centre as point of culmination.
The interrelated inner relations are directed towards the centre

Movements starting from one's own being can be enhanced by suggestions of counter-movement. Synthesis of movement and counter-movement

Discharge of tension from outside or subtractive

Centrifugal: Outward pull

Discharge of tension from within or additive

The articulating energies and impulses illustrated by the example of a leaf (growth in several directions). Union of material tension and ideal tension (i.e. simultaneous presentation of essence and appearance).
Adjustment between progressive forms of motion (Combination of rigid and free rhythms)

Coming and going represented by increase and decrease. Each dimension grows in relation to the other. (Two-dimensional relation of growth.)

A change in the direction of parallel rays may be considered as a repeated deflection of the centres (shifting centres) or, in the case of elementary forms, as a compromise (interlock). Compromise between straight, broken, and bent lines. The movements in the example should be defined mechanically as discharges of tension between fixed and moving points.

The compromises yield a series of forms whose movement is intermediate between the movements of free and strict form. The union between rigid and free rhythms produces hybrid forms. These hybrid forms may be perfectly harmonious or they may incline towards either parent.

Progressive trend towards the centre. Outside diminishing, inside increasing. The progressive multiplication at the centre brings about a proportional decrease as the movement approaches the periphery. Increase towards the centre.

Progressive interlocking of multi-dimensional growth:

Constructive interweave as combination, i.e., "naturally real and merely real" (simultaneity genetic and phenomenal presentation).

Compromise between free and strict form.
The combination of relaxed and rigid rhythm results in hybrid forms. Rays are defined by their relation to the centre, to the point.

Stratification is defined by the relation of outer to inner.

Stratification employed genetically (dynamic proximity)

Representation according to essence (movement, growth)

Synthesis of essence and appearance (interpenetration, interlocking)
Boundaries of different value for inside and outside

Boundary line of the outer areas. Boundary line of the inner areas. Boundary line of the innermost areas.

Example showing formation of differentiated boundaries. Space and form transparent in a three-dimensional body.

Boundary resistance to the vertical, that is, parallel deflection. Boundary resistance: deflection through an angle.

Illustration of the power of boundaries to deflect motion of varying density and acceleration.

Pen-and-ink drawings:
107(7) a: Movement in motion.
107(8) b: Movement in space.
107(9) c: Space division in degree of motion.
107(10) d: Separation of space.
Dimensions on the surface and in space

Orientation on the surface. The scene is the surface, more precisely the bounded plane. Two questions must be asked: What enters and where does it enter? The regular division yields the proportion to right or left, above or below. Point P is spatially-determined in two dimensions, first by its position with regard to above and below, second with regard to left and right.

The dimensions on the surface always turn up in pairs on either side of the centre. Polarity is present as in the case of good and evil.

The form produced on the surface is based on a function. A spiritual function requires expression. This expression is based on the elements. Materialized elements. The required expression is stabilized by material but by ideal means. The ideal elements liberate the expression and fix it clearly on the plane.
In the dimensions of the plane: Determination of position by means of co-ordinates.

Co-ordinates

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<th>Ordinates</th>
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Here the position of P is given by its position above (below) the abscissa and its position to the left (right) of the ordinate (1,2).

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<tr>
<td>to the</td>
<td>to the</td>
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<td>[2]</td>
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**Orientation in space.** In fixing a point in space, we must consider the dimension in front—behind as well as the two above-mentioned dimensions; in this case, the point P is fixed with respect to three dimensions. From the spatial point of view, P is also localised by its position in front of or behind the co-ordinate plane.

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Summing up these directions, we obtain the following picture in space:

In this case the point P is fixed with respect to three dimensions.

The three dimensions combined in cube.
The "I" orients itself in space according to three dimensions [1]. It judges its position in this space according to the concepts:

above → below
left hand → right hand
in front → behind

Synthesis of objective body and subjective space

Transposed to the surface, our spatial picture looks like this [2]. For the sake of precision we take a cubic space with fixed boundaries. On the left → right line the position is computed according to the distance from the left- or right-hand bounding plane or from an intermediate point. On the horizontal plane the distance to the front or back is also measured (estimated). The position in space is also computed by reference to the upper and lower plane. In above → below, the downward direction predominates; the upward drive operates only as a corollary to the downward pull (attraction of the earth). This is the real force: the upward drive is secondary.

In left → right (attraction of heat), the direction is free and the drive towards heat may predominate (accent on the direction from left to right).
In behind → in front the forward direction is also free, and the forward drive may dominate (accent on the direction from behind to in front).

If we consider direction or movement, we obtain the following result:
1. Dimension: left-right, movement each way
2. Dimension: above-below, parallel movement
3. Dimension: front-back, movement and countermovement [3]

Movement and countermovement (in which a clash is possible).

In answer to the question "Where does it enter?" we measure: height, width, length or depth, and displacement (in relation to the norm).

The forward drive, combined with direction

Dimensional directions in the "I"

1882 pg 8: Kipple in the rain. Pen-and-ink drawing.
Two directions of movement overlap in a rhythmic combination of forms.
Questions of articulation in pictorial space. In painting, 'the picture' should be regarded as the object. The picture is the whole; the parts should be evaluated in relation to the whole, that is, in relation to the picture. This makes format of foremost importance.

But it does not exclude the so-called object in the traditional sense. And even in the good old masters' objects must always be judged as parts of the whole picture. This fish is an 'object' in the old sense, while from the modern point of view it is part of the picture.

1. Picture body (format)

2. Fish body

1. Fish body

2. Fish space

Four outer pictorial limits of space

Parts of the fish body a, b, c

Or four corners of space, the inner boundaries of the fish body, h, i, k, l

1956 circa. Rewarded in 1956. Fish in circle. OK.

The relation of the pictorial components to one another and to the whole:


(A pictorial sequence from 'Orpheus within square and circle' 1956.)
Practical considerations in regard to space: the spatial character of the plane is imaginary. Often it represents a conflict for the painter. He does not wish to treat the third dimension illusionistically. Today a flat effect is often sought in painting. But if different parts of the plane are given different values, it is hard to avoid a certain effect of depth. If everything remains perfectly flat, we might under certain circumstances have a good carpet. If it does not remain flat, we come to the formal problem of the third dimension.

One of the artist's basic problems is how to enlarge space.

We do it by means of overlapping planes. In this way we can create the illusion of larger and smaller planes in depth. Side by side, one behind the other, overlapping, interpenetrating. If we compare the steps, we tend to see differences in them. The more facts of a side by side and one behind the other, argue the presence of 'behind-in-front'. Here even boundaries are spatial, and progression always produces an effect of depth.

Even after the Renaissance, perspective was used in the enlargement of space. It is an intellectual device.

There have been other experiments with exact methods in art: exotic and endotopic treatment, by flooding and tapering off of colour.

All this is a struggle for space. The struggle is not determined by outward necessity, the aim is inward. It encompasses a number of things, including the ultimate problems of space. Instead of problems we might say: a certain mystery. Simple things can also present a problem. We must ponder a great many factors that all culminate in the problem, the mystery.

Once extension in one of the two dimensions is brought out sharply, we have the impression of a plane. It brings with it a tendency to orient oneself by this dimension.

Major-minor, large or small components, brilliance-darkness, behind-in-front. And no desire or need to bring in a third dimension gives rise to very simple artistic contrasts.

If what we designate as the main object is not in the foreground but in between, and similar things lie in front and behind, as regards the third dimension we shall have three different frontal planes. Then the main action takes place in the middle, through its relation to the frontal planes 'behind' and in front'.

There is a conceivable bridge between the foremost and the hindmost: so the middle is not free. We see that there is an element of unclarity in the dimensions. The notion of fluid space with a fourth imaginary dimension, 'time', makes nothing clearer.

These intellectual constructions require exact clarification if they are to serve as an artistic law.
Endotopic and exotopic treatment: with a view to simultaneous interpenetration.

The movement of interplay contrasts, here via "black" in different ways. Sometimes we have an endotopic treatment aimed at producing contrast on the boundary, and sometimes an exotopic treatment. Sometimes the exotopic centre receives a special new emphasis. A conflict arises between ordinary and exotopic. Then we have a sort of mesh of forms.

The simultaneous treatment at inside and outside points to the concept of simultaneity, i.e. of contrasts between many dimensions (p. 40).

Cf. the interpretation of ground-plan and elevation in House, outside and inside (p. 84) in contrast to the increased emphasis on the ground-plan in House at crossroads.

For the mesh of forms, i.e. the simultaneous treatment of ground-plan and elevation, cf. the frequently reproduced pictures:

- 1913:99: Composition with windows, oil.
- 1913:352: The full moon, oil.
- 1913:307: Faleris, brown-green, oil on paper.
- 1913:300: G-Darkin (p. 80).
- 1913:301: Inside of House (154), with main emphasis on endotopic elevation.

Cf. 9383:8: Inside, Watercolours.

"Positive-negative plane formation as interpenetration of form and space." Colour reproduction in Die Kunst unserer Zeit.

Endotopic - exotopic

Those two principles of the positive-negative treatment of relief, applied to linear figures containing intersections.

Rule: in handling boundary contrasts, always stay on one side of the line.
If we call to mind Roke's statement: "The depth of our surface is imaginary," it follows that without a perspective viewpoint in space, 'the relation of the areas' have to be understood. This proves necessary if we wish to indicate clearly the direction of motion.

We have a three-dimensional space where size, value or colour is added to a finite plane figure. Roke Roke's conception of the third dimension differs appreciably from the generally held notions of space and dimensions.

It is based on the space-time unit which covers completely every movement.

Movement from black to white

Schematic representation

Countermovement from white to black

The two movements taken together

Movement and counter-movement in the dimension: in front-behind
Orientation in pictorial space is achieved through the idea that the work is a mirror-image of the ‘I’ and moreover an upright image of an ‘I’ that stands.

The upright ‘I’ and the work look each other in the face. Because the ‘I’ is assumed to be upright, the dimension above → below remains the same both in the ‘I’ and in the work. If the mirror, for example, were not upright, but fixed horizontally to the floor or ceiling, the dimension above → below would seem the wrong way round according to the mirror image.

The next dimension left → right appears in the same direction in the work (the mirror-man). But if I raise my left hand, the mirror-man raises his right; if I advance my right leg, the mirror-man responds with his left. This logical reversal becomes important on the stage when real human beings face us, though they seem reflected in a mirror. When the stage script says ‘left’, it has to make clear therefore whether it means to the left of the audience or of the stage.

These different treatments – the endotopic and the exotopic – are diametrically opposed to one another.

Expressions of energy are based on contrast: this contrast between endotopic and exotopic treatment applies not only to the way it actually works, but also to the function that is set in motion. What is fixed exotopically on the picture plane tends to stand out.

What is treated endotopically, however, is set in motion.

This brings us to the third dimension. But there are exceptions to all general principles. Sometimes, it becomes impossible to say that something really goes back or comes forward. The third dimension asserts itself, but still operates with flat values that stand a little farther back or forward. This is the relief style. Through it is expressed slight movement in the foreground. The endotopic and exotopic activation lessens the objective element and brings up the possibilities of boundary contrast.

A work is three-dimensional when its inside and outside can be clearly differentiated. When height, width, length, or depth may be measured on the basis of a norm. If one sets the norm at 100% for the whole work, the element of scale is clear. From this basis, the position of the picture is determined.

The elements that indicate the probability of a dynamic process – for example, axial movement from the inside out – can be marked off. If we wish to establish the direction of motion, we must also use this concept in three-dimensions.
It is possible to single out the unique by normal means, by way of movement or articulation. The dynamic is in the action, it moves, it is not static being, but process. Relatively permanent being and relatively active being. By way of contrast, the fashion of developing motion in a precise moment.

If localities tend towards the centre, there is a psychological reason for it. The notion and the less notion are mixed. The meaning of this law is that a simple natural scene is given and that in this natural scene one particular thing is emphasized.

The weight on the centre stresses the deviation from the norm. The arrow as active agent in the monosided motion of the total space.

To sum up: the beholder of the picture should imagine that he has his mirror image before him. Then he can assume that the dimensions above → below and left hand → right hand in the picture run in the same direction as his own dimensions, but that as far as the dimension in front → behind is concerned, the directions are reversed; in a manner of speaking they meet him halfway.

The picture as mirror image of the creative artist; the dimensional concepts are made to fit him.

'I' and the picture look each other in the face.

left hand-right hand change in front-behind above-below remains stationary
6. Objects in nature investigated in regard to their inner being. Essence and appearance

What we are after is not form but function. We shall try to be exact but not one-sided. This is quite a task and we shall try just the same. Knowledge tries to be as precise as possible. The imaginary is indispensable. What we are after is not form, but function. Here again we shall try to be precise: the machine's way of functioning is not bad; but life's way is something more. Life engenders and bears. When will a run-down machine have babies? The fundamental things of life are theoretically present of themselves; they are essence exact function, with 'God' so to speak (as one is still entitled to say). Human judgement yields certain approximations. According to our standard, it has 'come a long way', or 'still has far to go'. In any event limits soon make their appearance. The formula of the function is far away, but it is somewhere, the source and origin.

Footnote page from the "Theory of Animations" with notes on the various functions: fifty days and fifty nights (inspired); among them three hot days and two cool days (noted).

\[\text{Footnote:}
\text{1This text is the final version of the article.}
\text{"Erste Versuche in Einfühlung der Natur," which was later considerably revised and published in the}
\text{Zeitschrift für Gestaltung. The first}
\text{version bears no date, but was most probably written several years before the revision and}
\text{publication. In the first version the emphasis is on}
\text{the sensations of 'function' and the 'creator'.}
\text{In the second version, the accent is on a}
\text{narrative relation between exact knowledge (the}
\text{educational factor) and intuition.}
\text{The article has taken the title from the text.}
\text{2Crossed out in text: 'Boundaries begin in}
\text{circular regularity, where the creative point moves}
\text{with the flow process.'}
\text{3Crossed out in text: 'The hash anchor is far debt,
but the pivot point is somewhere.'}
\text{As creation is related to the creator, so is the work of art related to the law inherent in it.'}
\text{The work grows in its own way, on the basis of common, universal rules, but it is not the}
\text{rule, not universal à priori. This work is not law, it is above the law. As projection, as}
\text{phenomenon, It is 'ever moving' and 'ever limited'; but it does match the infiniteness}
\text{of the law in this: even in its limited sphere, the reckoning does not come out even.}
\text{Art is a transmission of phenomena, projection from the hyper-dimensional, a metaphor}
\text{for procession, divination, mystery. But let us investigate further.}
\text{Consider the actual with benevolence: the present should not be deprived of its rights,}
\text{but measure it by the eternal that is preserved throughout the changing times, periodically}
\text{stirred up or, quite frequently, taken back to the womb, yet immensely fruitful even in}
\text{the latent state. Measure everything by the natural process and its law. That prevents}
\text{obsolescence, for everything is in flux and flows fast today. Do not define today, define}
\text{backwards and forwards, spatial and many-sided. A defined today is over and done for.}
\]
Formalism is form without function. When we look round us today, we see all sorts of exact forms: whether we like it or not, our eyes gobble squares, circles, and all manner of fabricated forms, wires on poles, triangles on poles, circles on levers, cylinders, balls, domes, cubes, more or less distinct or in elaborate relationships. The eye consumes these things and conveys them to some stomach that is tough or delicate. People who eat anything and everything do seem to have the advantage of their magnificent stomachs. They are admired by the uninitiated formalists. Against them the living form. The initiate divides the primordial living point; he possesses a few living atoms; he possesses five living, ideal elements, the pictorial pigments, and he knows of a little grey spot where one can keep successfully from chaos to order.

He has a prescience of premonition. He has a certain knowledge of the first action, can move things into being and make even their motion visible. His motion leaves traces in them and there you have the magic of life. And for the rest there is the magic of experience.

Metalegic is concerned with the smile, the gaze, the scent, all the seductions between good and evil. The investigation of functions never ceases, and yet there are still, even today, plenty of obstacles, thank God perhaps. For in the face of the mystery, analysis stops perplexed? But the mystery is to share in the creation of form by breasting forward to the seal of mystery.
For the artist, dialogue with nature remains a condition sine qua non. The artist is a man, himself nature and a part of nature in natural space. But the ways that this man pursues both in his production and in the related study of nature may vary, both in number and in kind, according to his view of his own position in this natural space. The ways often seem very new, though fundamentally they may not be new at all. Only their combination is new, or else they are really new in comparison with the number and character of yesterday's ways. But to be new as against yesterday is still revolutionary, even if it does not shake the immense old world. There is no need to dispense with the joy of novelty, though a clear view of history should save us from desperately searching for novelty at the cost of naturalness.

Yesterday's artistic creed and the related study of nature consisted, it seems safe to say, in a painfully precise investigation of appearance. I and you, the artist and his object, sought to establish optical-physical relations across the invisible barrier between the 'I' and the 'you'. In this way excellent pictures were obtained of the object's surface filtered by the air; the art of optical sight was developed, while the art of contemplating unoptical impressions and representations and of making them visible was neglected. Yet the investigation of appearance should not be underestimated; it ought merely to be amplified. Today this way does not meet our entire need any more than it did the day before yesterday. The artist of today is more than an improved camera; he is more complex, richer, and wider. He is a creature on the earth and a creature within the whole, that is to say, a creature on a star among stars.
Study of the complementary effect of ribs and leaf shapes with identical inner form and changed outer form. The plane form that comes into being is dependent on the interlocking lines. And where the power of the lines ends, the contour, the kind of the plane form, arises. Theoretical knowledge of the energies that create and articulate forms in nature serves as a basis for the creation of free and composite forms.

Figure 1: Illustrated leaf. Watercolour.
Accordingly, a sense of totality has gradually entered into the artist’s conception of the natural object, whether this object be plant, animal, or man, whether it be situated in the space of the house, the landscape, or the world, and the first consequence is that a more spatial conception of the object as such is born.

The object grows beyond its appearance through our knowledge of its inner being, through the knowledge that the thing is more than its outward aspect suggests. Men dissect the thing and visualise its inside with the help of plane sections; the character of the object is built up according to the number and kind of sections that are needed. This is visible penetration, to some extent that of a simple knife, to some extent helped by finer instruments which make the material structure or material function clear to us.

The sum of such experience enables the "I" to draw inferences about the inner object from the optical exterior, and, what is more, intuitive inferences. The optic-physical phenomenon produces feelings which can transform outward impressions into functional penetration more or less elaborately, according to their direction. Anatomy becomes physiology.

But there are other ways of looking into the object which go still farther, which lead to a humanisation of the object and create, between the "I" and the object, a resonance surpassing all optical foundations. There is the non-optical way of intimate physical contact, earthbound, that reaches the eye of the artist from below, and there is the non-optical contact through the cosmic bond that descends from above. It must be emphasised that intensive study leads to experiences which concentrate and simplify the processes of which we have been speaking. For the sake of clarification I might add that the lower way leads through the realm of the static and produces static forms, while the upper way leads through the realm of the dynamic. Along the lower way, gravitating towards the centre of the earth, lie the problems of static equilibrium that may be characterised by the words: 'To stand despite all possibility of falling'. We are led to the upper ways by yearning to free ourselves from earthly bonds; by swimming and flying, we free ourselves from constraint in pure mobility.

All ways meet in the eye and there, turned into form, lead to a synthesis of outward sight and inward vision. It is here that constructions are formed which, although deviating totally from the optical image of an object yet, from an overall point of view, do not contradict it.

Through the experience that he has gained in the different ways and translated into work, the student demonstrates the progress of his dialogue with the natural object. His growth in the vision and contemplation of nature enables him to rise towards a metaphysical view of the world and to form free abstract structures which surpass schematic intention and achieve a new naturalness, the naturalness of the work. Then he creates a work, or participates in the creation of works, that are the image of God’s work.
"Exact experiments in the realm of art"

We construct and keep on constructing, yet intuition is still a good thing. You can do a good deal without it, but not everything. Where intuition is combined with exact research, it speeds up the progress of research. Exactitude winged by intuition3 is at times best. But because exact research is exact research, it gets ahead even without intuition, though perhaps not very quickly. In principle it can do without intuition. It can be logical; it can construct. It can build bridges boldly from one thing to another. It can maintain order in the midst of turmoil.

In art, too, there is room enough for exact research, and the gates have been open now for quite some time. What was accomplished in music before the end of the eighteenth century has hardly been begun in the pictorial field. Mathematics and physics provide a lever in the form of rules to be observed or contradicted. They compel us — a salutary necessity — to concern ourselves first with the function and not with the finished form. Algebraic, geometrical, and mechanical problems4 are steps in our education towards the essential, towards the functional as opposed to the impressional. We learn to see what flows beneath;5 we leave the prehistory of the visible. We learn to dig deep and to lay bare. To explain, to analyse.

We learn to look down on formalism and to avoid taking over finished products. We learn the very special kind of progress that leads towards a critical striving backward, towards the earlier on which the later grows. We learn to get up early to familiarise ourselves with the course of history. We learn cogent truths on the way from causes to facts. We learn to digest. We learn to organise movement through logical revolutions. We learn logic. We learn organisation. As a result the tension between us and the finished product eases. Nothing exaggerated — tension inside, behind, underneath. Passionate only deep within, inwardness.
All this is fine but it has its limits: intuition remains indispensable. We document, explain, justify, construct, organise: these are good things, but we do not succeed in coming to the whole. We have worked hard: but genius is not hard work, despite the proverb. Genius is not even partly hard work, as might be claimed on the ground that geniuses have worked hard, in spite of their genius. Genius is genius, grace; it is without beginning and end. It is creation. Genius cannot be taught, because it is not a norm but an exception. It is hard to reckon with the unexpected. And yet as leader it is always far ahead. It bursts ahead in the same direction or in another direction. This very day, perhaps, it is already in a place we seldom think of. For from the standpoint of dogma, genius is often a heretic. It has no law other than itself. The school had best keep quiet about genius; it had best keep a respectful distance. The school had best lock up the secret and guard it well. For if this secret were to emerge from latency, it might ask illogical and foolish questions.

It would stir up a revolution. Surprise and perplexity, indignation and expulsion. Out with the total synthesist! Out with the totalizer! We're against it! The insults would fall like hail: Romanticism! Cosmicism! Mysticism! In the end we should have to call in a philosopher, a magician! Or the great dead (who are dead)? We should have to hold classes on holidays outside the school. Out under the trees, with the animals, by the side of brooks. Or on the mountains in the sea.

We should have to give assignments such as: construction of the secret. Sancta ratio chaotic! Scholastic and ridiculous. And yet that would be the assignment if construction accounted for everything. But we may as well calm down; construction is not absolute. Our virtue is this: by cultivating the exact we have laid the foundations for a science of art, including the unknown X, making a virtue of necessity.

Law

Irregularity means greater freedom without transgressing the law. The conflict between universal and restricted application. The partial choice has expressed itself as an absolute structure (omission of the universal) or as a relative structure. Accented, but at the same time susceptible of being measured by the law which forms a part of it. All figure rotates the general to the particular. It is more personal or less, according to the nature of the relation. But if the priests ask sternly: "What is this shocking anomaly you are producing?"—the absolute structure makes it possible to prove after the fact that the law has been observed, while the relative structure includes the proof, rejects the question, and makes the proof unnecessary. Thus the absolute is more free in its gesture, but not in its essence. Many
things are free without showing it; others are free only in a very limited sense but present a free appearance in the freedom of this gesture.

To be an abstract painter does not mean to abstract from naturally occurring opportunities for comparison, but, quite apart from such opportunities, to distil pure pictorial relations. Example of opportunities for comparison:

What is represented looks like a woman, a cat, a flower, an egg, a cube.

Pure pictorial relations: light to dark, colour to light and dark, colour to colour, long to short, broad to narrow, sharp to dull, left-right, above-below, behind-in front, circle to square to triangle.

In regard to the question "Abstract?" the treatment of direction is crucial. If you set the yellow forward and the blue back, then that is abstract.

But if you use lighting to emphasize or underemphasize in front-behind than that in representational. According to the angle at which it falls on the picture, the beam of light produces forward and back. You are imitating a plastic object with the help of a light source that lies outside the picture plane and cannot strike the plane as such.

This kind of representation that gives the illusion of an object (whether known in nature or not) can be particularly unpleasant if the painted light, for example, comes from the left while the window in fact stands to the right.

The crucial point in evaluating such a picture is not whether dog, cat, etc. or "nothing" (which does not exist) is represented, but whether the representation makes use of means that belong to picture-making, or do not.

Purity is an abstract realm. Purity is a separation of elements pictorially and within the picture. Nothing may be added that comes only from outside. If, despite the pure separation of the elements, extraneous concepts like "catdog" establish themselves pictorially and in the picture, they are permitted. Thus from an abstract point of view the outcome cat or dog is not to be condemned if it occurs along with (or in spite of) a pure use of the pictorial elements. What is to be condemned is blurring introduced by extraneous concepts. Where the action of the elements is pure, effects of behind and in front are: a) usually inevitable, b) a considerable problem, c) permitted.
The light can contribute to the representation if it does not come from outside but is formed in the picture. In other words, its source must be in the picture both as regards position and function.

A schematic example of pictorially pure use of light:

Examples:
1891/2: Garden at an old garden. Watercolour.
1880-90: Sunset, Oil.
1880s 14: Ad Pannemaker, Oil.
Gladde, p. 122.

In contrast to the rest of the picture, the source of light must be shown by extraordinary and extremely powerful means (cause and effect). The light may be bright on a medium contrast, e.g., normal grey; the middle zone makes fine gradation possible where obstacles to unlimited diffusion occur. The light may also be warm (a source of heat).
II. Let us develop: let us draw up a topographical plan and take a little journey to the land of better understanding. The first act of movement (line) takes us far beyond the dead point. After a short while we stop to get our breath (interrupted line or, if we stop several times, an articulated line). And now a glance back to see how far we have come (counter-movement). We consider the road in this direction and in that (bundle of lines). A river is in the way, we use a boat (wavy motion). Further upstream we should have found a bridge (series of arches). On the other side we meet a man of like mind, who also wants to go where better understanding is to be found. At first we are so delighted that we agree (convergence), but little by little differences arise (two separate lines are drawn). A certain agitation on both sides (expression, dynamics, and psyche of the lines). We cross an unploughed field (area traversed by lines), then a dense wood. He gets lost, searches, and once even describes the classical movement of a running dog. I am no longer quite calm either: another river with fog (spatial element) over it. But soon the fog lifts. Some basket-weavers are returning home with their carts (the wheel). Accompanied by a child with the maniest curls (spiral movement). Later it grows dark and sultry (spatial element). A flash of lightning on the horizon (zigzag line). Over us there are still stars (field of paint). Soon we come to our original lodging. Before we fell asleep, a number of memories came back to us, for a short trip of this kind leaves us full of impressions.
Usually several of them will have to stand together to produce forms, or objects, or other secondary things. Planes produced by lines entering into relations one with another (e.g., as on acoos stormy water courses) or spatial structures produced by energies related to the third dimension (swarming fishes).

Through such enrichment of the formal symphony the possibilities of variation, and with them the ideal opportunities for expression, grow beyond number.

In the beginning is the act; yes, but above all it is the idea. And since infinity has no definite beginning, but is circular and beginning less, the idea may be regarded as the more basic. In the beginning was the word, as Luther translated it.

IV. All becoming is based on movement. In Lessing's Laocoon, on which we wasted a certain amount of intellectual effort in our younger days, a good deal of fuss is made about the difference between temporal and spatial art. But on closer scrutiny the fuss turns out to be mere learned foolishness. For space itself is a temporal concept.

When a point turns into movement and line—that takes time. Or when a line is displaced to form a plane. And the same is true of the movement of planes into spaces.

Does a picture come into being all at once? No; it is built up piece by piece, the same as a house.

And what about the beholder: does he finish with a work all at once? (Often yes, unfortunately.)

Didn't Fourier say: For the understanding of a picture, a chair is needed? Why a chair? To prevent the legs, as they tire, from interfering with the mind. Legs get tired from long standing. The space in which we move belongs to time, character belongs to movement.

Only the dead point is timeless. And likewise in the universe, movement is the basis of everything. (Where do they get the energy? That is the idle question of a dispossessed man.) Peace on earth is an accidental congestion of matter. To take this congestion as basic is mistaken.

The Biblical story of Creation is a good parable for motion. The work of art, too, is first of all genesis; it is never experienced purely as a result.

A certain fire flares up; it is conducted through the hand, flows to the picture and there bursts into a spark, closing the circle whence it came: back into the eye and farther (back to one of the origins of movement, of vibration, of idea). What the beholder does is temporal too. The eye is so organized that it conveys the parts successively into the crucible of vision, and in order to adjust itself to a new fragment has to leave the old one. After a while the beholder, like the artist, stops and goes away. If it strikes him as worth while—again like the artist—he returns.

In the work of art, paths are laid out for the beholder's eye, which gropes like a grazing beast (in music, as everyone knows, there are channels leading to the ear—in drama we have both varieties). The pictorial work springs from movement, it is itself fixed movement, and it is grasped in movement (eye muscles).

V. Formerly, artists depicted things that were to be seen on the earth, things people liked to see or would like to have seen. Now the relativity of visible things is made clear, the belief expressed that the visible is only an isolated case taken from the universe and that there are more truths unseen than seen. Things appear enlarged and multiplied and often seem to contradict the rational experience of yesterday. An effort is made to give concrete form to the accidental. The inclusion of concepts of good and evil creates an ethic. Evil should not be an enemy who triumphs or who shame us, but a power contributing to the whole. A part of conception and development. The primordial-masculine (evil, stimulating, passionate) and primordial-feminine (good, growing, tranquil) together producing a state of ethical stability.

To this corresponds a simultaneous union of forms, movement and countermovement, or to put it more naively, of objective contrasts (the use of disjunct colour contrasts, as by Delaunay). Every energy requires its complement to bring itself to rest outside the field of force. Abstract formal elements are put together like numbers and letters to make concrete beings or abstract things; in the end a formal cosmos is achieved, so much like the Creation that a mere breath suffices to transform religion into art.

VI. A few examples: A man of antiquity sailing a boat, quite content and enjoying the ingenious comfort of the contrivance. The ancients represent the scene accordingly. And now: What a modern man experiences as he walks across the dock of a steamer: 1. his own movement, 2. the movement of the ship which may be in the opposite direction, 3. the direction and velocity of the current, 4. the rotation of the earth, 5. its orbit, 6. the orbits of the moons and planets around it.

Result: an interplay of movements in the universe, at their centre the 'I' on the ship. An apple tree, a blossom, the roots, the rising sap, the trunk, a crossection with annual rings, the blossom, its structure, its sexual functions, the fruit, the core and seeds. An interplay of statics-growth. A sleeping man, the circulation of his blood, the measured breathing of the lungs, the delicate function of the kidneys, in his head a world of dreams, related to the powers of fate. An interplay of functions, united in rest.

VII. The relation of art to creation is symbolic. Art is an example, just as the earthly is an example of the cosmic. The liberation of the elements, their arrangement in subsidiary groups, simultaneous contraction and construction towards the whole, pictorial polyphony, the creation of rest through the equilibrium of motion: all these are lofty aspects of the question of form, crucial to formal wisdom; but they are not yet art in the highest sphere. A final secret stands behind all our shifting views, and the light of intellect gutters and goes out.
Lecture delivered on the occasion of an exhibition at the Jena Kunstvollin, 29 January 1901.


We can still speak rationally about the salutary effects of art. We can say that imagination, born on the wings of individual stimuli, conjures up states of being that are somehow more encouraging and more inspiring than those we know on earth or in our conscious dreams.

That symbolizes conscience, by showing it that there is something more than the earthly and its possible intensifications. That gravity cannot be broken, that it cannot be broken by artists or priests.

For, in the long run, even intensified reality is of no avail.

Art plays in the dark with ultimate things, and even it reaches them.

Let us imagine that the earth and the sky are one, that you and I are one, and that we are one with the world. Let us imagine that the soul is one with the earth and the sky, that the soul is one with the world.

Let us imagine that the soul is one with the earth and the sky, that the soul is one with the world.

Let us imagine that the soul is one with the earth and the sky, that the soul is one with the world.

Ladies and gentlemen:

As I prepare to address you here, in the presence of my work which should really speak for itself, I cannot help wondering a little whether I have sufficient grounds for saying anything and whether I shall be able to do it right.

For while as a painter I feel quite in command of the means to move others in the direction in which I myself am driven, I feel that it is not within my power to map such paths so surely through the word.

Still, I comfort myself with the thought that my words will not stand alone; their aim is merely to complement the impressions gained from my pictures and to add some definition that may be missing.

If I manage this at all I shall be content and consider that my aim in telling you has been achieved.

It is often said that a painter should paint and not talk. I should have been glad to do this approach by concentrating on the parts of the creative process which are carried on largely in the subconscious while the work is being formed. Quite subjectively, I believe that this would justify a lecture by a painter, for it would involve a change of emphasis, a new approach. It would mean a partial shift of accent from the formal aspect, which has been consciously overemphasized, to the question of content. A consideration of this sort would appeal to me and might enable me to express my thoughts in words.

But were I to take this course I should be thinking too much of myself and forgetting that most of you are much more at home in matters of content than of form. So I won't be able to avoid saying something about form.

First I shall give you a look into the painter's workshop and after that I'm sure we shall understand one another.

There must, after all, be some common ground between laymen and artists, where they can meet halfway and the artist will no longer look like a mere eccentric, but like a creature.
set down unaided, as you were, in a world of innumerable forms, and who, like you, must get his bearings in it as best he can. Who differs from you only in that he manages by his own specific means and methods, and that sometimes, perhaps, he is happier than the uncreative man, who cannot achieve release through art.

You will surely grant the artist this relative advantage, for he has it hard enough in other respects.

Let me use a parable. The parable of the tree. The artist has built himself with this world of many forms and, let us assume, he has in some measure got his bearings in it: quietly, all by himself. He is so clearly oriented that he orders the flux of phenomena and experiences. I shall liken this orientation, in the things of nature and of life, this complicated order, to the roots of the tree.

From the roots the sap rises up into the artist, flows through him and his eyes. He is the trunk of the tree.

Soiced and moved by the force of the current, he directs his vision into his work. Visible on all sides, the crown of the tree unfolds in space and time. And so with the work.

No one will expect a tree to form its crown in exactly the same way as its roots. We all know that what goes on above cannot be an exact mirror image of what goes on below.

It is clear that different functions operating in different elements will lead to sharp divergencies.

And yet some people would like to deny the artist the very deviations that his art demands. They have even gone so far in their zeal as to accuse him of incompetence and deliberate distortion.

And yet all he does is in his appointed place in the tree trunk is to gather what rises from the depths and pass it on. He neither serves nor commands, but only acts as a go-between. His position is humble. He himself is not the beauty of the crown; it has merely passed through him.

Before I begin to discuss the realms that I have likened to crown and roots, I must own to certain quibbles.

It is not easy to orient yourself in a whole that is made up of parts belonging to different dimensions. And nature is such a whole, just like art, its transformed reflection.

It is hard to gain an overall view of such totality, whether it be nature or art, and it is still harder to communicate the view to others.

The answer lies in methods of handling spatial representation which lead to an image that is plasticolly clear. The difficulty lies in the temporal deficiency of language.
For in language there is no way of seeing many dimensions at once.
In spite of this deficiency we must consider the parts in great detail.
But with each part, regardless of all the problems it presents, we must not forget that
it is only a part. Otherwise our courage may flag when we encounter a new part leading
us in an entirely different direction, to new dimensions, to a distant realm where our
memory of previously explored dimensions may give way.
To each dimension as it seems away in time, we ought to say: You are becoming past,
but later on perhaps, at some critical—perhaps fortuitous— juncture, we shall meet again
and once again you will be present.
And if, as more and more dimensions turn up, it becomes increasingly difficult for us
to visualise the different parts of the structure all at once, we must simply be very patient.
Unfortunately, what the so-called spatial arts have long succeeded in accomplishing,
what even the temporal art of music has achieved so eloquently in polyphony, this simulta-
aneous view of many dimensions which is the foundation of the great climaxes of drama,
is unknown in the realm of verbal explanation. Contact between dimensions must be
made outside this medium; and afterwards.
And yet perhaps I can make myself well enough understood to help you to experience
inter-dimensional contact when you look at pictures.
As a humble go-between, who does not identify himself with the crown of the tree, I
think I may promise you a radiant light.
And now to the point, to the dimensions of the picture.
I have spoken of the relation between root and crown, between nature and the work of
art, and explained it by the difference between earth and air, and the correspondingly
different functions of depth and height.
In the work of art, which we have likened to the crown, we enter specifically into pictorial
dimensions, which demand distortion of the natural form.
For such is the rebirth of nature.
What, then, are these specific dimensions?
First of all there are more or less limited formal factors, such as line, tone value, and
colour.
Most limited of all is line, for it is a matter of measure alone, its use depends on length
(long or short), angles (acute or obtuse), radial and focal length. All these can be
measured.
Measure is the hallmark of this element, and wherever the possibility of measurement
is in doubt, line has not been treated with absolute purity.
Of a rather different nature is tone value, or chiaroscuro as it is also called, the many
degrees between black and white. In this second element we deal with questions of
weight. One degree has white energy, more densely or more loosely packed; another is
more or less weighted with black. One degree can be weighted against another. And
further, the black can be related to a white norm (on a white background), the white
related to a black (on a blackboard), or both together related to a middle grey.
Thirdly, colour, which obviously has still other characteristics. For we cannot fully define
it by measure or weight: we dare not use a rule, we dare not divide it into different,
for example, between a pure yellow surface and a pure red surface of the same extension and the same brilliance,
an essential difference remains—what we designate by the words yellow and red.
Just as we can compare salt and sugar in every respect—except in their saltiness and
sweetness.
I should therefore like to call the colours qualities.
Accordingly, we have three formal factors, measure, weight, and quality. Despite their
fundamental difference, there are certain relations between them.
The nature of these relations will be seen from the following brief analysis.
Colour is first of all quality. Second comes weight, for it not only has colour value but also
light value. Thirdly it is measure, for in addition to the above-mentioned values, it also
has limits, its area and its extension, which can be measured.
Tone value is first of all weight, while secondly, in its extension or limits, it is measure.
But line is only measure.
Thus we have applied three lines of reference, which all intersect in the realm of pure,
cultivated colour; two of which meet in the realm of pure tone value; and only one of
which extends to the realm of pure line.
Each according to its contribution, the three reference lines characterise three realms
which in a way resemble three boxes, one inside the next. The largest box contains three
reference lines, the middle-sized box two, and the smallest one only one. (It is perhaps in
this light that we shall most readily understand Liebermann’s remark that drawing is the
art of omission.)
We see that the three realms fit together in a very special way; thus it is no more than
logical to handle them all with the same precision. The possibilities of combination
are already rich enough. Blurring is justified only when there is a special inner need;
such a need might account for the use of coloured or extremely pale lines, or of opal-
and the distinguishing symbol of pure tone is the linear scale with its immeasurable variations
of length. The symbol of pure tone is the weight scale stepped between white and black.
But what is appropriate to the nature of pure colour? What symbol best expresses its
character?
The complete circle—this is the form which best expresses the essence of colour relations. Its definite centre, the possibility of dividing its circumference into six arcs and of drawing three diameters through the six intersections, make it possible to picture the chief scenes in the drama of colour relations.

These relations are first of all diametric; and just as there are there three diameters, so there are three main diametric relations, which are:

- Red-green, yellow-violet, and blue-orange (or the principal pairs of complementary colours).
Along the circumference a primary colour alternates with one of the main mixed or secondary colours, so that the mixed colours (three in number) are situated between their primary components: green between yellow and blue, violet between red and blue, orange between yellow and red.
The complementary pairs connected along diameters destroy one another's colour when they mix across the centre to make grey. This is true for all three pairs, as we see from the fact that all three diameters bisect one another in the same point, the grey centre of the colour circle.

Furthermore, a triangle can be drawn through the points of the three primary colours; its corners are the primary colours themselves, while its sides are given whatever colour comes from a mixture of the two corresponding corner colours. Accordingly, the green side lies opposite the red corner, the violet side opposite the yellow corner, and the orange side opposite the blue corner.
This gives us three primary colours and three main secondary colours, or six main adjacent colours, or three pairs of related colours (colour pairs).

Leaving the formal elements, I come to the first constructions using the three kinds of elements just listed.

This is the heart and core of our conscious creative effort.

This is a critical juncture. Mastery of these elements gives us the power of creating things so strong that they can reach out into new dimensions, far removed from conscious associations.

This phase of artistic endeavour has the same crucial importance in a negative sense. This is the point where one can miss the greatest and weightiest content and fall in spite of the finest sensibility. Just for lack of orientation on the formal plane. As far as I can say from my own experience, it is the artist's momentary disposition that decides which of the many elements will emerge from the comfort of their natural order to rise together in a new order.

To produce a figure which one calls form or object.

In a very limited sense, this choice of formal elements and the way in which they are combined is analogous to the musical relation between motif and theme. As the figure grows little by little before our eyes, an association of ideas may easily tempt us into an objective interpretation. For with a bit of imagination every complex structure lends itself to comparison with familiar forms in nature.
The associative properties of this structure which, the moment it is interpreted and named, already devotes some extent from the artist's direct purpose (or in any case from his most intense preoccupation)—these associative properties have become a source of impressionistic misunderstanding between artist and layman. Whilst the artist is bending every effort to group the formal elements so purely and logically that each has to go exactly where it does and none trespasses on its neighbour, a layman, looking over his shoulder, will utter these devastating words: "That's a very poor likeness of Uncle." If the painter has control over his nerves, he will think: "Bother Uncle. I must get on with my building..." This new stone," he says to himself, "seems a bit heavy, it's pulling things to the left; I'll need a stable counterweight on the right to restore the balance."
layman, and nothing then prevents him from accepting it, if it introduces itself under a really appropriate name.

This acceptance and formulation of the object may suggest additions which can be put in necessary relation to it, objective merits which, if the artist is fortunate, may fill in a slight gap in the formal structure as though they had belonged there to begin with. Thus the issue concerns not so much the presence of an object as the kind of object, what it looks like.

I can only hope that the layman who keeps looking for some favourite object in pictures, will gradually disappear from my surroundings, and that when he does come from time to time he will be no more than a ghost which can't help what it does. For a man knows only his own objective passions. And sometimes admittedly we are very pleased when a familiar face, as though of its own accord, emerges from a picture.

Why not?

I have admitted the justification of an objective concept in a picture and so obtained a new dimension.

I have named the formal elements singly and in their special context.

I have tried to show how they emerge from this context.

I have tried to explain their appearance in groups and their combination into figures, limited at first, then somewhat widespread.

Figures which may be called constructions in the abstract, but which may be named conceptually: star, vase, plant, animal, head, man, etc. according to the association they have conjured up.

I began with the dimensions of the pictorial elements, such as line, tone, value; and colour.

Then the first constructive combination of these elements brought with it the dimension of form or, if you prefer, of the object. Now a further dimension is added, the dimension occupied by questions of content.

Certain proportions of line, certain combinations of tone values, certain colour harmonies always bring with them very definite and distinctive modes of expression.

The linear proportions, for example, may involve angles: for instance, angular zigzag movements, in contrast to a smooth horizontal line, strike resonances that contrast correspondingly.

From this ideal viewpoint, two linear figures, one characterized by firm cohabitation, the other by loose dispersion, will produce a similar contrast.

Contrasting examples of expression in the realm of tone value are: broad use of all the tones from black to white, which suggests strength and full deep breaths, or limited use of either the upper light half of the scale or of the lower deep dark half, or of the medium shades round the grey — all of them weak from too much or too little light — or hesitant twilight shades around the middle.

Again great contrast in content.

And what possibilities for variety of content are provided by colour combinations.

Colour as tone value, e.g. red in red, in either words the whole scale from no red to too much red, extended, or the same scale bound.

Or the same in yellow (something quite different), or the same in blue. What contrasts!

Or: diametrically opposed colours, that is, changes from red to green, from yellow to violet, from blue to orange:

Each a subworld of the world of content.

Or: colour changes towards the segments of the circle, not touching the grey centre, but meeting in warmer or cooler greys.

What subtle variants on the above-mentioned contrasts!

Or: colour changes towards the circumference of the circle, from yellow through orange to red, or from red through violet to blue, or right across the whole circle.

How many steps there are between very slight shading and full-blooded colour harmony?

What a perspective on the dimension of content!

Or: finally, passage through the whole of the colour order, including diatonic grey, and even making use of the black-white scale.

Only in a new dimension can we go beyond those last possibilities. So we might now consider where to put the assorted colours. For every assortment has its own possibilities of combination.

And every figure, every combination, will have its particular constructive expression, every form its face, its palaeography.

The pictures of objects look out at us, serene or severe, tense or relaxed, comforting or forbidding, suffering or smiling.

They look out at us in all the contrasts of the physical-palaeographic dimension; they can extend from tragedy to comedy.

But this is far from the end of the matter.

The forms, as I have often called these object figures, also have their own postures, which result from the way in which the selected groups have been put in motion. If an attitude of firm repose has been achieved it means either that the construction has provided for broad horizontals without elevation, or, where the elevation is appreciable, that the verticals have been treated conspicuously and consistently.

While retaining its repose this firm posture can also be somewhat more relaxed. The whole action can be transposed into an intermediate realm such as water or atmosphere, where there is no longer any vertical to dominate (as in swimming or gliding).
I say intermediate realm to contrast it with the first, wholly earthbound posture. In the next example a new posture appears, which moves imperceptibly, and so transcends itself.

Impenetrable gesture of this sort point clearly to the dimension of style. This is the beginning of romanticism in its especially cruelly interminable phase. This gesture tries to take us to rise above the earth; the next one succeeds, rising under the impulse of energies that triumph over the force of gravity. If, finally, I can carry these earth-shaking forces inward, as far as the cosmic sphere, I shall be graduating from the stormy-pathetic style to the romanticism that opens upon the universe.

Thus the static and dynamic aspects of pictorial mechanisms provide a close parallel to the opposition between classicism and romanticism. By this time our figure has gone through so many dimensions and dimensions of such importance that it would be inappropriate to keep calling it construction. From now on we shall allow it the rescinding name of composition. As far as the dimensions are concerned, we shall content ourselves with these rich possibilities.

I should now like to consider the dimensions of the object in a new light and try to show why the artist often arrives at what seems to be an arbitrary 'distillation' of natural forms. First of all, he does not set such store by natural forms as do the many realists who criticize. He sets less store by these realities, because it is not in these finished forms that he sees the crux of the natural creative process. He is more concerned with the formative powers than with the finished forms.

He is a philosopher, perhaps without exactly wanting to be one. And while he does not optimistically declare this world to be the best of all possible worlds, or believe it to be so bad that it is unfit to be taken as a model, he nevertheless says to himself:

In its present form it is not the only world possible! Accordingly, he looks inside the finished forms that nature sets before his eyes. The deeper he looks, the easier it becomes for him to extend his view from today to yesterday. And in place of a finished image of nature, the crucial image of creation as genesis imparts itself to him. It dawns on him that the process of world creation cannot, at this moment, be complete. He extends it from past to future, gives genealogy duration. And he goes further:

Standing on earth, he says to himself: This world has looked different and in time to come it will look different again.

And saying this he means: Entirely different forms may well have arisen on other stars. Such journeying along the paths of natural creation is an excellent school of form. It can move the artist profoundly and, once moved, he will be sure to care for the free development of his own form production. In view of all this, the artist must be forgiven if he looks on the present stage of his particular phenomenal world as accidentally caught in time and space, if it strikes him as absurdly limited compared to the more profound, more mobile world of his vision and feeling.

Is it not true that even the relatively tiny step of a glance through the microscope discloses images that we should all declare to be fantastic and lar-lobich if, unequipped to understand them, we ran across them by accident? If Mr X were to see these same images reproduced in a popular magazine, he would cry out indignantly: 'You expect me to believe that such forms exist in nature? Why, it’s just bad art!'

Does the artist concern himself with microcosmy? History? Palescience? Only for purposes of comparison, only with a view to mobility. He is not interested in a scientific check on fidelity to nature.

But only in freedom.

A freedom that does not lead to set phases of development, exactly as they once occurred or some day will occur in nature, or as they might (one day demonstrably perhaps) occur on other planets, but rather a freedom that demands to be mobile in the same way that great nature itself is mobile.

From prototype to archetypes.

It is the presumptuous artist who gets stuck somewhere along the way. The chosen artists are those who dig down close to the secret source where the primal law feeds the fountains of development.

What artist would not like to live where the central organ of all space-time motion, call it brain or heart of creation as you will, activates all functions? In the words of nature, in the primal ground of creation, where the secret key to all things lies hidden? But it is not the place for all men. Let each man go where his heart leads him. Our antipodes of yesterday, the impressionists, were perfectly right to live with the trailing vines and underbrush of everyday appearances. But our pounding heart drives us down, deep down to the primordial underground. What springs from this journey downward, whether it is called dream, idea, fancy, shall be taken seriously only if it ties in with the appropriate strains to form a work of art. Then curiosities become realities, the realities of art, which make life a little wider than it ordinarily seems to be. For they not only put a certain amount of spirit into reproducing things seen, but make secret vision visible.
With the appropriate pictorial means', I have said. For this is the point where it is decided whether pictures will be born, or something else. And here the character of the pictures is also determined.

Our former times have no doubt produced a good deal that is confusing, though we may still be too close to judge. But among artists, even the youngest, one effect seems gradually to be gaining ground:
The cultivation of these pictorial elements, their purification and their use in the pure state.
The legend about the childishness of my drawing must have started with those of my linear compositions in which I tried to combine a concrete representation, let us say a man, with the pure use of the linear element.
If I had wished to represent the man 'as he is', I should have required so bewildering a tangle of lines that a pure treatment of the element would have been out of the question; there would only have been an unrecognisable blur.
Besides, I have no desire to show this man as he is, but only as he might be.
In this way, perhaps, I am able to benefit from an association between philosophy and pure craftsmanship.
And this applies to all the formal elements, including colour; we must avoid the slightest trace of blurring.
So much for the supposed untrue colouring of modern art.
As you can see from this 'childish' example, I engage in the partial processes: I also draw.
I have tried pure drawing; I have tried painting in pure line values; in colour I have tried all the partial operations suggested by my exploration of the colour circle. Thus I have worked out a number of different types of painting: in colourless line values, in complemenary colours, in many colours, and in full colour. Always combined with the inner subconscious dimensions of the picture.
I have also tried every possible synthesis of two types. Combining and again combining, but always, as far as possible, cultivating the pure element.
Sometimes I dream of a work of vast scope, spanning all the way across element, object, content, and style.
This is sure to remain a dream, a vague possibility, but it is good to think of it now and then.
Nothing can be rushed. Things must grow, they must grow upward, and if the time should ever come for the great work, so much the better.
We must go on looking for it.
We have found parts, but not the whole.
We still lack the ultimate strength, for there is no culture to sustain us.
But we are looking for a culture. We have begun in the Bauhaus.
We have begun with a community to which we give everything we have.
We cannot do more.

Example of a work of broad scope extending through the dimensions of everyday object, in content and style. This work was produced over the period from 1914 to 1915, which includes
the 'highly productive years at the Bauhaus and
at the Düsseldorf Academy.'
NOLCH 1: Éros in the landscape. Q1.
Variable point of view combined with static-dynamic synthesis.

Shifting-anticipate and viewpoints.
Several viewpoints and connection between stages 1, 2, 3, 4 (et al.).
Given: an "active harmony" (left-center) and balance through countermovement.
1. The concept of analysis

I shall begin with a brief clarification of concepts. First, the meaning of analysis. The term is most frequently applied to chemical analysis. A certain compound, for example, is widely sold because of its excellent effects. The manufacturer's commercial success arouses the curiosity of other manufacturers and they send a sample of the product to a chemist for analysis. He must proceed methodically in order to break the product into its ingredients. To solve the riddle.

In another case a food or beverage is harmful to the health. Again the chemist is called in to disclose the harmful ingredients. In both cases the given is a whole consisting of various unknown parts; the problem is to find the ingredients.

In our business the motives for analysis are naturally different. We do not undertake analyses of works because we want to copy them or because we suspect them. We investigate the methods by which another has created his work, in order to set ourselves in motion. This approach should save us from regarding a work of art as something rigid, something fixed and unchanging. Exercises of this kind will guard us against creeping up to a finished product hoping to pick off what is most striking, and to make off with it.

One particular kind of analysis is the examination of a work with a view to the stages of its coming-into-being. This kind I call the analysis of 'genesis'. The first book of Moses, concerned with the creation of the world, is called Genesis. It tells what God created on the first day, on the second day, etc. The total world that surrounds us is articulated in terms of history.

We are artists, practical craftsmen, and it is only natural that in this discussion we should give priority to matters of form. But we should not forget that before the formal beginning, or to put it more simply, before the first line is drawn, there lies a whole prehistory: not
only man's longing, his desire to express himself, his outward need, but also a general state of mind (whose direction we call philosophy), which drives him from inside to manifest his spirit in one place or another.

I emphasise this point to avoid the misconception that a work consists only of form. But what must be stressed even more at this point is that the most exact scientific knowledge of nature, of plants, animals, the earth and its history, or of the stars, is of no use to us unless we have acquired the necessary equipment for representing it; that the most penetrating understanding of the way these things work together in the universe is useless to us unless we are equipped with the appropriate forms; that the profoundest mind, the most beautiful soul, are of no use to us unless we have the corresponding forms to hand.

Here we must forget about the isolated stroke of luck which may enable the dilettante just once to produce a successful work which puts the professional to shame. After these general preliminaries, I shall begin where pictorial form has to begin: with the point that sets itself in motion.
Shortly after application of the pencil, or any other pointed tool, a (linear-active) line comes into being. The more freely it develops, the clearer will be its mobility [1].

But if I apply a line, e.g., the edge of a block or coloured crayon, a plane is produced (at first and when the freedom of movement is very limited) [2].

If we had a medium that made it possible to move planes in a similar way, we should be able to inscribe an ideal three-dimensional piece of sculpture in space [3].

But I am afraid that is utopian.

For the present then let us content ourselves with the most primitive of elements, the line. At the dawn of civilization, when writing and drawing were the same thing, it was the basic element. And as a rule our children begin with it; one day they discover the phenomenon of the mobile point, with what enthusiasm it is hard for us grown-ups to imagine. At first the pencil moves with extreme freedom, wherever it pleases.

But once he begins to look at these first works, the child discovers that there are laws which govern his random efforts. Children who continue to take pleasure in the chaotic are, of course, no artists; other children will soon progress towards a certain order. Criticism sets in. The charm of the first play-drawing gives way to the beginning of order. The free motion of the line is subordinated to anticipation of a final effect; obviously the child begins to work with a very few lines. He is still primitive.

But one can’t remain primitive for long. One has to discover a way of enriching the pitiful result, without destroying or altering the simple, intelligible plan. It becomes necessary to establish a relation between things of first importance and those which are subsidiary.

From point to line
The line as element
Linear and planar character
Linear-active

From point to line. The point is not dimensionless but an infinitely small planar element, an agent carrying out zero motion, i.e., resting. Mobility is the condition of change. Certain things have primordial motion. The point is cosmic, a primordial element. Things on earth are obstructed in their movement; they require an impetus. The primordial movement, the agent, is a point that sets itself in motion (genesis of form). A line comes into being. The most highly-charged line is the most authentic line because it is the most active.

In all these examples the principal and active line develops freely. It goes out for a walk, so to speak, aimlessly for the sake of the walk.

- Dynamic repose

Dynamic movement. The point seen in dynamic terms, as an agent.

Simple linear motion, self-contained. Free line a-b [1]. Free line a-b, companion line a'-b'. (The melody in Fig. 1: accompanied) [2, 3, 4, 5].

Free line making detours [6, 7, 8, 9].
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Two 'Interpenetrating' lines

Two secondary lines, moving round an imaginary main line [10, 11, 12, 13]

Dihedral-individual, connected by rhythmic articulation
is short of time, wants to get to 1, then to 2, then to 3, etc. as quickly as possible. More like a series of appointments than a walk. This is shown by the straight stretches. But both the free and the hurrying line are purely active types. The linear tension of the straight stretches (most active line) is discharged between the points of tension lying on the path. (Duellum = static, static.) The straight lines are the quintessence of the static.

Neither line nor plane, but some sort of middle thing between the two. At the beginning it is linear, the movement of a point; it ends by looking like a plane. A medial line: planar effect obtained by circumscribed lines.

The line determined by few points. Time is of the essence. In these examples the hurrying line circumscribes plane figures like the triangle and square. The energies that move a line are the result of forces working in different directions. Tension is connective.
A square stood on its corner moves into the dynamic realm, the tensions are diagonal.

The line circumscribes a circle and an ellipse.

Taken as a line it has a soothing character and is without beginning or end. In an elementary sense (taken as an action of the hand) it remains a line, but when it is completed the linear impression inevitably gives way to a planar impression. The mobile character disappears (no one looking at the disc of the moon will take it for a merry-go-round and want to go for a ride). It is replaced by a sense of perfect rest, especially in the case of the circle.

Linear-medial, planar-medial in amplified, composite examples

The straight line (as a progression of points), quintessence of the static (1, 2).

The circle (as a progression of points), quintessence of the dynamic (3).

Variation on ISOE A 4: Embraced. Drawing.
Plane formation with revelal lines in a structure of a higher order.
Point-line movement = planar impression.
The concentric design (Fig. 4, p. 111) is known as a norm.
In displacement representing devotion from the norm the central moves apart, the elementary forms multiply and change, evenly or unevenly.
In this case the character of the lines is wholly passive.

We still see lines, but not linear acts; what we see are linear results of planar actions. The line is not made but suffered. What is this? a square. How did it come into being? What are the underlying tensions?

Linear movement displaced to produce this effect.

It came into being when a line entered into a relation of tension with a parallel line and discharged this tension. The most general cause therefore is a reciprocal tension forced into two dimensions. Result: a square, without accent, without emphasis. With horizontal emphasis, the square becomes a recumbent rectangle.

The linear movement rotated to produce this effect.

Plane formation by progressive linear rotation round a point. In linear-passive development the line operates as a planar element; and the impression therefore is planar. Any suggestion of a line is left over, and is suffered (passive lines, active plane formation).

The triangle came into being when a point entered into a relation of tension with a line and, following the command of its Eras, discharged this tension. The tension between point and line is characteristic of the triangle.

In a contrary direction to this brief account of the line runs the account of the plane contained in it. When the line was active, it created divisions into imaginary planes. Meanwhile the planar character thrust itself forward and became active when the line was designated as passive. The plane is pure bred, the truncal element.

"Note in the manuscript: pictorial examples of 'linear-active', 'linear-passive'; and 'line of both characters':
Girodet, p.233.

With elements of both characters, linear-active and plane active:
1821/131: Composition with B, OIL.
Colour reproduction: Girodet, p.236.
Girodet, p.236.

Similar examples: 1821/133: Picture with master and pupils (Stalitsa oilpainting). OIL.
The pictures were written in the margin at a later date as visual aids for the students.

But if it becomes mobile, it takes on a linear character.

The farther the line A-B progresses, the thinner it becomes until it becomes coincident, which takes us back to the active line.
The basic formal differences: active, middle, passive. We must distinguish three characters:

I. a linear character:

Linear-active – planar passive.
In 'active' the point goes to work, and the effect is linear in keeping with the point progression. Linear energies (tonalities between active lines) result in passive planes, as side effects.

II. a middle character:

Middle character: point-line progression, planar impression.
In linear-'middle' (middle) the point progression leads indirectly, by way of the contour to a planar impression. Linear energies, "middle" (middle) lines and planar effect.

III. a planar character:

Planar active – linear-passive.
In linear-'passive' the line works as a planar element. Active plane, linear side effect (passive lines).

I. and III. are main, primary characters; II. (the middle ground) is intermediate, a hybrid.
The genesis of composite forms (Interpenetration or mesh)
A new type of structure arises when the parts do not lie side by side but overlap.
The nature of such structure is characterised by the word interpenetration. One part penetrates the other, or the two parts penetrate each other.
The relation between the parts: no contact, or contact in point, in line, in plane, in space.
The situation of the parts: apart, grouped but separate, touching, or interpenetrating.

Side by side, or Individual [1].
Circular planes with linear interpenetration (variant: interlocking) [2].

One-dimensional contact (contact in point or line, balanced or unbalanced) [3].
Composite form with planar contact. Two-dimensional contact in the plane. More or less interpenetration (planar penetration). The same less from both sides [4].

Interpenetration and division of the common territory on the basis of the inner constructive relations and elementary formal factors [5].
Overlapping or mixture in the passive realm. Interpenetration as organisation of differences to form a unity [6].
Studies in movement:

Planar results from both kinds of linear progression [1].
Movement in one direction on the basis of a norm [2].
(Examine the way. Follow it back to the gentle start. Compare the action with the scene of action.)

The mesh of the planes indicates the body-content. Diagonals suggest intermediate positions [3, 4].
The mesh should be interpreted as a summation of all three kinetic processes (in the three directions). Tension between plane and counterplane is the quickest way to form bodies.
We must also consider the transparent representation of tone values. They suppress the values of frontal planes, so eliminating them and letting us look in freely. Then space is formed in space.

Analytic representation as partial action.

Tension between two directions of motion, plane and counterplane.
The greater energy wins out.
Further possibilities:
Penetration as polyphonic intersection of different planar structures and directions of motion.
Structures of similar or dissimilar form, which stand close together, touch, interpenetrate, or intermesh, while one absorbs the other.
Linguistic analogy:

Active: I fell: The man felled the tree with the axe.

Middle: I fell: The tree fell with the man's last stroke.

Passive: I am felled: The tree lay felled.

At the end of the exercise: Attempts at composition with these three elements. L (linear territory) and P (planar territory) - here clarity prevails. M (middle territory) blurred.

Preliminary remarks: The violin as finished form, as a work of art, as an independent personality (not a machine). The interpretations, for example, of Picasso, Braque, and the present-day Paris school.

Analytic beginnings suggested for those who are not too sure of themselves; afterwards, free composition with the acquired forms.

Ratcliff: the freest possible compositions, more emphasis on violins as violins. Results at first predominantly analytic.
Convergence: Two weeks ago we took up, among other things, the free line. I chose as an example a kind of line suggesting a restful walk without definite aim or purpose. This line had something restful, harmonious about it; if used as a theme in a composition, it would have favoured a treatment with accompanying forms. In musical terms, it would then have suggested a folk-song rather than a more elaborate form. And actually we added only companion forms or substitute forms to this restful line.

Companion forms, of an absolute converging character (1) of an effective converging character (2)

or effectively converging, while the companion line relishes its independence (3). Rather like the path of a man with a dog running free.
**The dimensional signs**

Concerning the development of a point into a line, of a line into a plane, of a plane into a body.

- **Point.** The point as primitive element, all-pervasive.
- **Line.** A point discharges its tension towards another point. The causal principle is the will inherent in reciprocal tension. Essence of a dimension. One-dimensional element.
- **Plane.** Tension between line and line results in a plane. Essence of two dimensions. Two-dimensional element.

The best way to illustrate the essential difference between this new structure and the previous examples of convergence is to consider each line as the path of a man. In the previous examples we may speak of friendship; the companions never part. But in this new, divergent example we see the companion only once, running briefly across our path at point D.

**Body.** The line moves and produces the plane; the plane moves and the body comes into being. Essence of three dimensions. Three-dimensional element. The cube is a balanced synthesis of three definite dimensions and its such the normative symbol of corporeality.

The movements summarized: Characteristic of the dimension behind-in front (the third dimension) is the increasing progression of points, lines, and surfaces. In the point the opposite ends of the pictorial elements are still effective; less so in the intermediary stages. They need more room before they can be weighed or measured by the eye, or critically appraised.
Body

Body
two-dimensional.
External-material,
active-phenal
(outer surface
of a body)

Body
three-dimensional.
(body-outward)

Spatial

Spatial
two-dimensional
encompassing
(activated passive)

Exotopic
encompassing
(without body)

Spatial
three-dimensional
and transparent

Inward

Inward
two-dimensional
(content)

Most-inward
(content)

Inward
two-dimensional,
representation
of outer planes

In contrast
to the inside and
outside of a body

Inward
two-dimensional,
body inside

Purely inward,
body innermost

The inward
plays the dominant part.
The whole inward territory
designated by the word 'content'
A theme treated in different ways

Interpenetration with exotopic and endotopic accent

The common ground treated endotopically, the individual ground with exotopic accent

Interpenetration with alternating endotopic and exotopic accent (in relief)

Interpenetration of space and volume:
Variations on the treatment of relief
Variants: 'Meandering or interwinded'.
Organisation and unification of variations:
Repetitive interpenetration, equal parts unequally accentuated.
Concentric mesh
in harmonious interpenetration.
Forms generated by the superimposition
and mixing of 1 and 2.
With displacement
(shift of centre)
or change of position
the mixed forms are modified.

Alternating
endotopic and exotopic accent
on 1 and 2

Inner linking of the two in free variation,
Interpenetration of space and body.
Basic possibilities:
Combinations of identical forms,
which are related,
touching,
which interpenetrate,
which are meshed with one another,
one of which absorbs the other,
a) in constructive-logical connection,
b) in a partly free selection.
(Metaphorical, sometimes psychological,
allowing deeper spiritual reaction.)
Combined operations on horizontal planes of different heights and on vertical planes variously oriented as to left and right.

Perspective

Let us imagine two railway tracks (1). There is something very misleading about this (1). For in reality these lines are quite divergent. If the rails keep moving farther apart, the train is bound to jump the track. Or suppose they take the opposite direction (2).

Rails that are going to cross somewhere up ahead are almost more alarming (3). What is going on? Well, the fact is we have suddenly passed from the planar to the spatial realm, to the third dimension. We are doing perspective. In our last dwelling we observed to our regret that we have no three-dimensional script that although we can move points into lines,

or lines into planes

we cannot, with any visual effect, move planes to form volumes. Consequently we must help ourselves with perspective. But this will not be complicated or difficult if we stick to the essentials, and it is well worthwhile to clarify the underlying phenomena.
Construction of a natural progression that depends on length and thickness of lines and the spaces between them. (Possible amplification: scramble the lines while preserving their length and thickness.)

So these are railway tracks. Railway tracks lie on sleepers. How shall I represent this? If I were a surveyor or a map-maker, and I had to draw tracks on a plane, my picture would show two parallel lines.

Two parallel lines seen at right angles.

Cross-gradation. The sleepers would have to be placed at regular intervals.

The two parallel lines shift with a change in our visual angle, if the form of the space between two lines is left open, something also happens.

With cross-gradation.

Seen laterally from above with perspective progression towards the horizon (intermediate position).

Represented in spatial terms, this diagram looks quite different. As most Europeans know, the distance between the sleepers increases perceptibly towards the viewer.

Natural progression, seen frontally.
The front of the locomotive is at right angles to the plane between the rails (1). Thus at the start we have projected the greatest spatial elevation. We can now imagine new angles and planes in this new, third dimension (thus, for example, the new plane in Fig. 3 is at right angles to the plane in Fig. 2).

In the end we manage to construct a space into which we can march erect [4, 5].

**Construction in three dimensions**

**Lengthwise gradation:** Let us start once again from the notion of the rails but restricting ourselves to one sleeper lying far back and another that is close to us; in other words, to just two sleepers. We divide these sleepers into a number of equal parts; here for example, we intersect them at three points. A nearby and a distant sleeper divided into equal parts seen from the front [6].

In this way we pass from crosswise to lengthwise gradation; we see before us the perspective of a ground-plane with five parallel lines on it [7].

Now which line is most conspicuous? The middle line of course (from two to two). And in what capacity? As the vertical [8]. (Perspective progression with emphasis on the direction perpendicular to the sleepers.)

What does this vertical mean? It means that we ourselves have stood where it stands. (The frontal plane.)
The shifting vertical, with shift of viewpoint (position of the eye) from left to right.

If we now take a step to the left, the vertical will shift to Point 1 and the ground-plane will take on this form in projections:
Position of the observer shifted leftward [1].
Whereas if the observer situated himself at 3, this new diagram will result.
Position of observer shifted to the right [2].
In material or terrestrial statics the shortest way runs vertically from an original "front" position to a definitely marked-out horizontal line in the distance. The vertical (as plumb-line) means the correct way.

If I travel over a plane of this kind: the vertical stays vertical as long as I do not leave the line, while the other lines radiate towards me (3).
But if I leave the line, the picture runs off in the opposite direction (4, 5).
This brings us, incidentally, to the phenomenon of countermovement.
Now let us stand still and proceed as before in connection with the crosswise gradation (6). The following diagram results (7).
Again we have a space into which we can enter. I should like you to pay special attention to the side walls. On the ground-plane it was the vertical that assumed special importance; here it is the horizontal.
The horizontal. What does this horizontal mean? The answer will soon be apparent.

This also explains the following remark about central perspective (p. 186): The value of the whole process lies solely in the possibility of checking; there is no merit in drawing in proper perspective; everyone can do it. In the light of the rules for symmetrical composition (discussed already in space) a deviation from the norm (for cancer) Complex objects would actually follow the norm, the constructive rule. (p. 186) Perspective of men with heads (p. 184) in which there are main visual points can be found.


Teubner, Leipzig 1915. Walter Lichtmayer, Musterbildung und Maske, Ford, 1912, Berlin 1911. All these works were in Paul Klee's library.

This diagram illustrates the concept of a shifting viewpoint. The straight lines have different lower terminal points, some of which are situated outside the picture. Instead of this, Klee notes: "I'm far away. I'm not an observer. I'm very close." The eye follows various alternative points, on the basis of which the space is limited by means of varying distance. The shifting viewpoint, he notes elsewhere, 'is the correction between stages 1, 2, 3, 4. In the end the viewpoint stays out of the frame.'

In uncomplex objects in space, the upward and downward areas of bodies do not follow central perspective, but are shown in motion from the system upward by means of a shifting viewpoint. At the same time there is a deviation from the central axis, both to left and right. Through this consideration of movement and countermovement, a compositional balance, i.e., a symmetrical impression, is created. From the standpoint of central perspective (when seen as a norm) movement produces a distortion which is compensated by a countermovement.


A representation of the straight lines to their points of intersection shows that several viewpoints are present. Concerning this specific picture, Klee notes: "The further down the imaginary projection lines touch higher dimensions, the better." The points of intersection should be outside the pictorial space.
Within the space already known to us I have here built a second space whose upper surface is visible to the eye [1]. Hence we may speak more appropriately of a body than of a space contained within our visual field. For real spaces go beyond our field of vision (we are in them).

We have then a body that lets the eye look down on its upper surface. The horizontal plane that our eye sees from above lies lower than our eye, below us [1].

In this case the body yields no view of its upper surface [2]. If we suppose it to be made of glass, it will permit a view of this surface from below. But a horizontal plane that can be seen from below is situated higher than our eye, it is above us [2].
But in this third case something special happens. The eye cannot discern the surface as a surface either from above or below; it looks to us like a horizontal line.

This means that the body is exactly at the height of our eye. The horizontal is exactly at eye level. (If we want to be meticulous, we may add that the lengthwise and crosswise gradations coincide.) But what is true of this horizontal plane, is also logically true of the connected horizontal line of the two side walls. These horizontal lines at eye level appear again as horizontals in perspective projection.
The man or possessor of the eye may now stand forward at A or farther back (at B, C, D); from any of these positions the phenomenon of the horizontal will develop (A', B', C', D'). The horizontal is the connection between the points in space situated at eye level on the line of sight.

We can conceive of a large plane defined by all these points from A' to D' (as shown above), we can never see this plane, the plane of the horizon. Or limiting ourselves to A', we can conceive of a large disc.

The horizon as appearance, Material (earthbound) statics or pure statics. 'Seen.'

The horizon as idea, ideal (cosmically conscious) statics or idealised statics. 'Conceived.'

This horizontal disc separates all visible space into an upper and a lower part. As if we were in a great round tin, consisting of the tin and of its cover. This sign (vertical and horizontal) corresponds also to the human frame in reference to the attraction of the earth. We have an acute sense of the vertical that keeps us from falling, and if need be (in an emergency) we extend our arms to correct and counterbalance a mistake. In special cases we prolong the horizontal, as a tightrope walker does with his pole.

The vertical is the direct path from a frontal viewpoint to a distant horizontal laid out behind it. The horizontal means eye level.

In material (earthbound) statics the relation between height and horizon varies. A 'raised horizon' is an extended horizon.

The raising of the eye level brings with it a raising of the horizontal:

The questions of perspective we have broached and everything else that seems worth knowing on the subject can be checked or investigated with the help of a very simple apparatus. Fasten a glass disc in a vertical position and place it at eye level in front of the object to be projected. You observe with one eye, which must remain in a fixed position. You draw the essential lines of the object on the glass disc with ink or crayon. If the glass is not vertical the lines will look distorted. Similar distortions are created by photographers who direct their camera upward at an object whose perspective can easily be checked, e.g. a house.

Such images are not even objectively or logically wrong; the lower windows are closer to the eye than the upper ones, hence broader, which for purposes of perspective means larger. But at this point the human being puts his veto, because he wants his horizontal and vertical fixed; otherwise he will totter and grow dizzy. It is not logically but physiologically wrong. The value of the whole process lies solely in the possibility of checking; there is no merit to drawing in proper perspective; anyone can do it. Additional examples: Van Gogh’s perspective instrument, Hodler’s "canvas".

5 December 1921

Exercice:
Examples of balance in drawing and tone value, according to balanced structures in the plane.
3. Synthesis of spatio-plastic representation and movement

Irregular projection
Subjective theory of space
Shifting viewpoint
Ideal and material statics

Internal volumes, two-dimensional.
The broadening of the lines
corresponds to gradations from
far to near or: rear to front.

The same volumes seen from
the side (rotation)

Theory makes for clarification, but in the concrete instance there are such complicated influences at work that we cannot proceed consistently with theory alone; we must again digress a little.

We need mechanical function. This means working on the basis of a law, not in order to demonstrate the law, but in order to create a freer form, based on the rules.

In leaving the realm of rules, we upset theory. This departure from law and rule is something we must do morally, so to speak. Always bearing in mind the need for harmony, for sensitive organisation of the individual component parts, so that a satisfying result is achieved.
In art the essential is to create movement according to rules, to create deviations while bearing the rules in mind. If you adhere too strictly, you get into barren territory. There is no need to demand absolute conformity. It is only recently that we have been free to deviate from the rules. What do we gain by it?

We gain possibilities of spatio-plastic representation and movement that were limited under earlier methods. With constructive devices such effects might be obtained from one position. But that is only one way and not the direct way of showing different things at once. This possibility was seriously discussed only after it had been used by artists who know how to unify and combine organic processes.

[Image: Two square under construction. Watercolor.]

Note in Mies’ diary:

‘Even from the church tower the activity on the square looks heavy. But imagine how it looks from where I am.’

We must work our way back to unity. This can be done in the pictorial field by bringing disparate things together harmoniously. Here the links are important. And the scale depends also on the distance from the beholder.

The first step is a regular deviation based on projection. Projection means here that the viewpoint is not strictly static; it is displaced a little and the object moves along. We can also remain stationary and displace the object. The irregular consists in the accentuation of parts or the omission of certain parts. In any case, this introduces freedom into movement and movement into freedom.

*Central perspective with noncenter visual point.*
Irregular projection

Combined operations and projection in different positions, deviating from pure central perspective.

Organic combination of the main forms of perspective: interpretation of space and body, simultaneous inner and outer form. Representation according to essence and appearance.

Points to be considered:
Simultaneous, multi-dimensional phenomena.\(^1\) Multi-dimensional contacts. More complex structures.

In deviation from pure central perspective:
(a) deviating progressions;
(b) deviating position of the vanishing point (P zero);
(c) deviating perspective (and building boxes and building blocks).

Slight deviations are playful movements round the normal paths of construction. Pronounced deviations are movements contrary to the normal paths of construction.
Succession, interpenetration, or interlocking of perspectives.

(a) The shifting or variable viewpoint. Several viewpoints combined.
(b) Representation.
1. of the surface (superficial).
2. transparent-spatial.
3. analytically and plasticity reunited in 'transparent polyphony'. (Cubical volumes and volumes related to the cube interpenetrate in plastic transparency, sometimes producing a dovetailing, mobile structure which plays round the fringes of the law.) Body, line and outer space combined (e.g. cubic volume, cubic inner space, cubic outer space).
Most of these forms are combined. To understand the combined forms, we must break them down into their component parts.

Square surface at eye level

Square surface seen from above

Square surface seen from below

VR0099: Arabian city. Watercolour and oil on paper prepared with varnish. Intertwining of perspective. Simultaneous downward and upward views obtained by combination of several viewpoints. (Watercolour synthesis of several positions.)
Combined examples with basic forms of perspective (Perspective variations). Showing viewpoint and representation of space and volume.

Examples:
- [1982] 16: Church under construction, Pan and wash. Oil.

A theme with accompaniment or several themes. Single and combined articulation intermediate positions:

- Neither purely frontal
- Nor purely vertical
- Nor purely horizontal

The deviations singly and combined:

Rules made to be broken:

- Divisive formation
- Multiplying formation

- Form as addition
- Form as subtraction

(pictorial division)
(pictorial multiplication)
(pictorial addition, combined by summation)
(pictorial subtraction, definitely separative)

Synthesis of spatio-plastic representation and movement:
Six viewpoints can be unified and combined into a single median collective viewpoint.

The formal elements singly and as they are related.
Their appearance in groups, their limited synthesis. Then amplified to become forms or constructions. The balanced synthesis of different positions.
Phenomenology of apparent position and ideal position.

One need only imagine an object in space in order to appreciate the difficulties in the analytical approach.
But how else are we to arrive at an orientation in space? I do not know. All those divisions, even the most commonplace, have a meaning if we keep in mind the value of the part without forgetting the whole. If we remember that every single pair of statements is only an analytical operation and therefore partial, our procedure remains meaningful. Each pair of statements moves on a particular plane, and ultimately the different planes, taken together, produce a spatial synthesis, the summation that forms the whole.

Because I cannot do what I should prefer, namely, deal at one stroke with a whole comprising many of these elements (each in its place), I must resign myself to analytic methods.
Dimensional operations combined into a higher structure

Two-dimensional partial analyses of the four operations:

One pair of lines in like direction linearly expressed

Another pair of lines in like direction linearly expressed

One pair of lines in different directions linearly expressed

Another pair of lines in different directions linearly expressed

The four operations combined
The natural possibilities of width
In all natural positions:

The single horizontal on the ground [1]
The single horizontal lifted [2]
Width accentuated
at its uppermost natural position [3]

**Static narrowness.** The perfectly static direction of gravity is one-sided and does not end in a middle position, but at the bottom. Crucial for the bottom-most position is the distance of the object from the '1'. When there is identification, the '1' is the object and the gravitational pull ends at the sole of the feet. This object (the '1') can be sensed but not seen, or seen only very approximately, if one is lying down. Lifting the viewpoint or point of departure also raises the given horizontal.

**Examples:**

1883: T: Church and castle, p.126.
1883: T: Denying in Egypt, p.146.
1909: T: prisoner. Oil and water on canvas. (Gedelin, p.196.

Colour drawings. Colour reproduction

Gebrechts, p.271.

The horizontal in itself, purely as form, is perhaps already movement. However, it gives an impression not of movement, but of rest. Perhaps the form is mobile, but it is rest that is suggested.

In discussions of statics, ‘lying’ means to be inactive. Lying and working are not easily compatible. Movement can be situated within a certain tendency towards rest. The single form asleep, but many sleepers together produce action.
Mechanics of subjective height [1]. For the 't', height and horizon are the essential factors. Slight elevation gives a good upward view, a poor downward view. Slight cover from above (important), good cover from below (unimportant). The result: an upward drive.

Great height gives poor upward view, good downward view. Good cover from above (important), poor cover from below (unimportant). Increased well-being.

Increased height, ascendency, positive. The horizon rises, the view of the ground-plane increases, the view from below diminishes, the upward drive is appeased. Dangers are reduced if you go to meet them.

Decreased height, retreatment, negative. Height, cover from above, downward view diminish. Pathological complexes of oppression arise (as a result of too much space and weakness above).

Mechanics between above and below ↑↓
In relation to height.
Constructive movement

Mechanics of width [2]. The left-right movement is less significant. The horizon, whether high or low, stands fast. Even a critical situation in respect of left and right is not of fundamental importance.

In the mechanics of width, the 'correct way' is formed by this movement ↑↓. Correct ways to the background lead rather to the left or to the right of space. There is either more cover from the left or from the right. Either more danger or more of a view to the right, or vice versa.

1936's t, all over cap roofless.
"Medusa and watercolour, vanished.
"The fluctuating definition of the foreground and background (involving the shortness of our depth perception) might suggest distance. This indeed is what happens in the actual split of space."
Actual planes and perspective planes by themselves and combined
(Frontal, horizontal, and vertical planes)

Actual plane: frontal or actual vertical plane as it appears from the front

Perspective horizontal planes

Perspective vertical planes

The three cardinal planes in their relation to the linear dimensions. The oppositions are only apparent. In series of planes friendship appears

1. Frontal plane from both sides
2. Vertical plane from left and right
3. Horizontal plane from above-below
The initial movement in ourselves; the active movement from us to the work; the communication of the work's mobility to others, the beholders of the work: those are the main divisions of the creative whole, pre-creation, creation, post-creation. If we follow the gradual unfolding of a primitive simple work, we shall obtain a clearer view of two things: first, the phenomenon of formation; formation in relation to impulse, formation bound to the conditions of life, formation as development from mysterious mobility to purpose. This phenomenon was discernible in the very earliest craft, where form in the smallest sense (structure) first made its appearance.

The relation between formation and form, which we discern even in the smallest things, retains its fundamental character in later stages, because it is determined by a principle. I think the nature of this relation can be stated in one sentence: the way to form, dictated no doubt by some inward or outward necessity, is higher than its own end and goal. The way is essential and determines the conclusive or concludable character of the work. Formation determines form and is therefore the greater of the two. Thus form may never be regarded as solution, result, end, but should be regarded as genesis, growth, essence. Form as phenomenon is a dangerous chimera.

Form as movement, as action is a good thing, active form is good. Form as rest, as end, is bad. Passive, finished form is bad. Formation is good. Form is bad; form is the end, death. Formation is movement, act. Formation is life. This was the first thing we saw as we followed the gradual unfolding of a primitive, simple work. Then a second revealed itself.

As the creative process continued, as the way grew longer, the danger of monotony became apparent. For the way, as an essential part of the work, should not tire us. It must rise higher, branch out excitingly, rise, fall, digress; it must become by turns more or less distinct, broader or narrower, easier or harder. And the sections must fall into a definite structure; with all their widening development, one must be able to encompass them at a single glance; they must enter into an intelligible relationship with one another. Through the identity of way and work, the work becomes structured 'along the way'; the first even rhythm develops into several rhythms. The different segments of the way join into an articulated whole. The interaction between the general structure of the whole and the natural structure of the parts forms the core of an elementary theory of proportion. The different modes of interaction produce works of different kinds.

The shifting viewpoint. Active, operative movement. Centres of meaning. Identity of way and work.

The word 'stimulated' says everything necessary for the beginning of action. The word 'stimulated' suggests the prehistory of an incipient act, its connection with what has gone before, its bond with the past.

The affective possibility of going beyond a beginning is further characterised in the concept, which, extended from beginning to end (not only to the beginning), produces a cycle - where motion is the norm so that the question of its beginning disappears. Under the impact of this normative motion a creative disposition takes form within us. Since we ourselves are moved, we find it easier to act things in motion.
Subjective horizon:
For eye level every plane appears as a straight line. The perspective foeci are always at horizon level.

Objective horizon:
The right way of the 'I' recedes from the marked-off space with vanishing point outside to the right and to the left. Then the space, too, is objectified.

Subjective theory of space. Wandering viewpoint. Irregular projection with free application of the principles of perspective.

Different viewpoints with change of place:

Summary: change of subjective height; viewpoint moving across left-right horizon.

Several viewpoints and several subjects in space: Possibility of connecting paths. Paths of various subjects in space. Persons with varying eye level.

Three persons see a frontal plane from three different points. Thus the synthetic viewpoint (or collective viewpoint) sees three planes.

Several viewpoints combined. The shifting viewpoint and the connection between stages 1, 2, 3, 4.

Where the viewpoint is shifted several times, different projected images appear simultaneously. In the subjective theory of space, movements and countermovements produce a balanced movement.

1. Subjective height and subjective distance: Possibility of a connection between viewpoint and base-point (Stages 1-4). The quickest path from an original viewpoint 'front' to a fixed horizontal 'behind' runs in a vertical direction. The vertical is the right way. To designate height and a horizon extended upward, the limits must remain rigid.

2. Ways of several subjectives in space. Vertical plane of the lady on the right or her right way.

3. Several viewpoints combined. The shifting viewpoint and the connection between stages 1, 2, 3, 4 (differences in height: p₁, p₂, p₃, p₄).

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In the realm of the static there are also movements; these movements, however, are not free but bound to the vertical. Movements of this restricted kind are not only:
1. construction,
2. balance, but also
3. movement of the whole static structure.
Balance is a movement away from the vertical, to which a corresponding countermovement is always opposed. This countermovement across the one-sided deviation from the vertical, in the movement of the static structure, the whole static organism moves. The vertical and the movements of balance change their place together.

(On the parallelogram of forces, see and fall, see pp. 413-419, on phenomena of balance, pp. 351-371.)

Examples:
1828 (10) Glitter (rigid). Oil on canvas.

Shifting viewpoint. Three men see a frontal plane from three positions; the symbolic viewpoint sees three planes. We have discovered one of the roots of spatial vision:

Variable viewpoints: Stages of movement from 1 to 3 (p₃ → p₂ → p₁).
Shift of point p and consequences:

<table>
<thead>
<tr>
<th>p₁</th>
<th>p₂</th>
<th>p₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>15</td>
</tr>
</tbody>
</table>
Six viewpoints: $E_1 - F_1$, $E_2 - F_2$, $E_3 - F_3$, $E_4 - F_4$, $E_5 - F_5$, $E_6 - F_6$. The same and summed up in a median collective viewpoint. Differences in height $p_1 \rightarrow p_0 \rightarrow p_2 \rightarrow p_3 \rightarrow p_4$ represented by the right way from AB to EF. Operations on horizontal planes of varying heights with related depth sequence. Uniformization achieved through the median height and width of the right ways.

Median height:

\[
63 + 74 + 42 + 51 + 27 + 14 = \frac{224}{6} = 4 \cdot 6
\]

Median width:

\[
161 + 144 + 61 + 94 + 51 + 15 = \frac{508}{6} = 9 \cdot 43
\]

The subjective way. The viewpoints descend from right to left, but not without intermediate rises (from 1 to 2, from 3 to 4). The points from 1 to 6 on AB are the base points of the 6 viewpoints. The mid-points on the lines from those base points to the corresponding viewpoints are in every case the right ways from AB to EF, hence the bisectors of the principal section in various positions. Points $E_1$ and $F_1$ are situated at a height of $\frac{1}{2}$. Points 1 (half-way from A to $E_1$) and 1 (half-way from B to $F_1$) are situated on the lower half of this lower section at the height of $\frac{1}{8}$. Then comes the double zigzag to the outside right and left: 1 $\rightarrow$ $E_1$ $\rightarrow$ $E_2$ $\rightarrow$ $E_3$ $\rightarrow$ $E_4$ $\rightarrow$ $E_5$ $\rightarrow$ $F_5$, 6 $\rightarrow$ $E_6$ $\rightarrow$ $E_5$, 6 $\rightarrow$ $F_6$, 6 $\rightarrow$ $E_6$, 6 $\rightarrow$ $F_6$. 1 $\rightarrow$ $E_1$. 2 $\rightarrow$ $F_2$, 3 $\rightarrow$ $F_3$, 4 $\rightarrow$ $F_4$, 5 $\rightarrow$ $F_5$, 6 $\rightarrow$ $E_6$, and 1 $\rightarrow$ $F_1$. 2 $\rightarrow$ $F_2$, 3 $\rightarrow$ $F_3$, 4 $\rightarrow$ $F_4$, 5 $\rightarrow$ $F_5$, 6 $\rightarrow$ $E_6$, and 1 $\rightarrow$ $F_1$.
Static and dynamic balancing movements. Lateral shift of weight is movement within the horizontal plane. And in tune with the symbol of the pair of scales the lateral shift of weight is connected with an ultimate effect of balance.

Movements that lead to balance and end in balance are not free; the vertical imposes certain conditions on them. Subject to these conditions, movements belonging characteristically to statics, provided they do not contradict the fundamental principle of balance, it is incorrect to say that 'static' means 'at rest' and that 'dynamic' means 'in motion'. For 'static' can also mean 'in conditional motion' or 'becalmed motion', while 'dynamic' can mean 'in unconditional motion', in other words 'under its own motion' or simply 'moving'.
Static-dynamic tension and position of balance

Statics: The terrestrial norm is rest. Terrestrial tension on earth is the prerequisite for motion.
Dynamics: From the cosmic standpoint, motion is the norm. There are static factors that lead to immobility and others that are themselves immobile (rhythm and balance). There are dynamic factors that are in motion and others that are ready for it.

Mechanical elements of statics:
- verticals: primary
- horizontals: secondary
- diagonals: tertiary within the rules of statics

Fundamental mobility of the fortuitous (diagonals)

Diagonals as tertiary parts (teleological balance)
- or diagonal connection as rise and fall

Diagonal synthesis of dimensions. In diagonals every point and its inverse point at the other end of the diameter must disclose a balance of the (two) dimensions. In every case we have a rotation of the centre but there must be a balance between left and right, between above and below (reciprocal motion). Two pairs of lines with different centres: hence movement of centre [1]. The moved centre can fall, lie still, or rise. The synthesis of several component movements tending towards a centre suffices to give an idea of the innermost essence of an irregular form of this kind. The centre is in motion; not only along the line, but also two-dimensionally, within the plane.

Analytically, according to component viewpoints. Part construction: not all lines are emphasised; (a) certain lines stressed, the rest unaccented; (b) the unaccented lines omitted (productive-destructive method). In the space between the lines, mediating actions occur, which stand for the structure of the relations between them. Successive emphasis on parts of the total form, representation of the line as distinctive or unifying.
Basic dynamic principle: Avoidance of static rules, gravitation, the plumbline hence no distinct verticals, horizontals, or diagonals. Feasible through mobility.

Static-dynamic tension
The causal principle is a reciprocal tension between purely terrestrial statics

The forces that move lines are gravity, evasion of gravity, or the result of forces moving in different directions.

(Cf. Gravity and momentum, p.395 and the pictorial schemata of the first, second and third laws of statics, p.414.)

Constructive principle: four viewpoints $P_1, P_2, P_3, P_4$ arranged in a square (first second, third, and fourth horizon) meet in a single point $P$ (median horizon) [7] (p.180).
The four viewpoints $P_1, P_2, P_3, P_4$ in another version [2] (p.180).

A variation. Constructive emphasis on diagonals [3].
Ideal statics. Pure dynamics (energies)

Area of the rules of ideal statics, first, second, and third degrees.

From the cosmic point of view verticals are never parallel; and horizontals are arcs. Cosmically speaking, tangents are unreal. Cosmically speaking, the area of the 'I' is a point.

Ideal and material statics. Ideal (cosmically conscious) statics or idealized statics. Material (terrestrial) statics or pure statics.

In the static realm stable means rigidly bound to the verticals. In the dynamic realm stable means settled harmonization of free mobility. Marked deviations in the static realm are deviations from the normal position of the verticals and horizontals, but are still verticals and horizontals.

Marked deviations in the dynamic realm are essentially shifts of centre and shifts of the localities dependent on the centres; the plumbline and the forces closest to it are ignored.

Material statics. (Gravitational forces in one direction)

Area of the rules of material or terrestrial statics

From the terrestrial point of view the parallelism of verticals and horizontals (really tangents) is an illusion caused by the enlargement of the area of the 'I'.

The centre of the earth is the centre of gravity.

Dynamics is the great, the principal area, the endless area of the cosmos.

Statics, by comparison, is an exception, where gravitation kills motion by subjugating it to an alien law. The suction of the stronger. This stronger power is itself dynamically moved and carries the vanquished along in its orbit. But the vanquished does not perceive this directly; he must accustom himself as best he can to the new power and gradually carve out a sphere of motion where, if he manages it skillfully, he can attain a kind of independence.

This is how the plant grows, how man and beast walk or fly.

From a terrestrial point of view: Statics — gravitational forces in one direction
Dynamics — energy

From a cosmic point of view: Only gravitation
The forces of gravity come together from all sides.
Ideal and material statics: the earth, from a cosmic point of view, provides the basis for a static-dynamic synthesis. Starting from form, earthbound man arrives at a cosmically ideal-static view of the world and an earthly-cosmic one.

Theory of style: The questions are these: Are verticals or horizontals present? Right angles? Centres? Peripheries? Theory of composition. The questions are these: Are the inner-constructive relations of form and format observed?
In a three-dimensional experiment with motion the moment when one plane is perceived only as a vertical is especially critical. For less significant are foreshortened planes. Hence the apparent irregularity of pace.

Conjunctive and free movement. It seems very likely that there is no such thing as a purely dynamic architecture, and here we must attach importance to the slightest hint leading in that direction. It would be well to take the appearance for the reality.

Our means of investigating natural structures by means of cross-sections and longitudinal sections is no doubt applicable to architectonic structures, but we should never find an example in which ground-plan and elevation were not fundamentally different. Which again means that there is no example of the purely dynamic in this field. Consequently we must situate architectural works in the purely static sphere, though there may be a certain inclination towards the dynamic. At best we shall find an intermediate sphere somewhere between the static and the dynamic.

In more ideal realms of art, such as painting, the greatest mobility of all is possible, an actual development from the static to the dynamic.
Converging horizontals jointed by diagonal lines.

Horizontal centred by means of displayed compass. Read travelled from A to C.

Operative on horizontal planes of different height.

Horizontals centred by means of displayed compass. Read travelled from A to C.

The shift of centre brings with it changed relations between height and horizon. Interaction of horizontals by upward-downward motion and the reverse.

Synchronises material and ideal statics, e.g., static and dynamic relations by setting in diagrams. Connections between viewpoints 1, 2, 3, 4. Dynamic shifting of static relations.

Change of subjective height and subjective distance: "1" very close, "7" not so close, "1" far removed. The combined foundation of the viewpoint 1, 2, 3, 4 provides alternating upward and downward views.

"Dial and model station: combined foundation or composite form.

Mobile progression on the basis of the 20-cent circle. From the centre of the earth outward, geocentric condensation.
Linear analysis of converging horizontal lines:
180a/8b: Muses in the landscape, p. 186.
Shift of static weights with deviation from normal eye level.

Stiffening verticals and deviations from the vertical
with slanted crossing line at right.
Linear analysis from:
180b: Muses in landscape, p. 186.

Static-dynamic synthesis, evolving from purely terrestrial statics. Connection between several viewpoints or stages, i.e., projection through space and time.
Linear analysis of:
180b/2b: Muses in landscape, p. 186.

"In the static realm static means rigidly bound to
the vertical. In the dynamic realm it means
constant alternation of free mobility."

Pure dynamic action within a limited sphere is only possible on the spiritual plane. Fundamentally, style is the human attitude towards these questions of the immanent and the transcendent. Accordingly, the field of style has two main parts. In the first, the static concept and the classical resemble one another; in the second, there is a kinship between dynamics and romanticism.

Between the two meeting-places, the static-classic and the dynamic-romantic, there is an intermediate realm, whose statics serve for dynamic freedom. Pathos is expressed in art as a motor impulse off the vertical, or as denial or disruption of the vertical.

These are also more peaceful syntheses of the two realms: where what is static, well-balanced and, often, quite symmetrical, is given a touch of the dynamic.
The style-forming tensions of the 'I'

Originally the 'I' too is a point.

Tensions make their appearance; for example, the one-sided tension of height.
Consequence: the 'I' grows upward.

Tension in different dimensions: height and width.
Consequence: the 'I' grows upward and at the same time spreads out.

Equal tension on all sides.
Consequence: the 'I' spreads outward radially.

Unequal tensions round about.

Note on p. 193:
The style-forming tensions of the 'I' refer to gravitation (inhibited individual urges) or momentum (free individual energy or free mobility). Height and width are static in nature. Equal tension on all sides points to the dynamic sphere (the natural dynamics of the circle). Unequal tension belong to the peripheral sphere of static-dynamic synthesis.
All figure is movement, because it begins somewhere and ends somewhere. In general the paths of the grasping eye are free in space and time; that is, the eye is not compelled to begin at a definite place, to proceed to definite places, and to finish in a definite place. Such constraint is imposed only by a particular pattern of movement, which lays down very definite paths in a very definite order.

The cardinal question: How shall I represent the movement from here to there? involves a factor of time.

Representation with change of place and moving picture plane

1. Different viewpoints as the subject moves in the landscape: change of place and shifting viewpoint.
   - Locality, object: passive
   - Subject: active

2. Irregular projection on an uneven surface.
   Where the basic surface moves, a shift of the schematic relationships (contraction, extension) occurs, making the whole picture more dynamic (cf. p.253).
   - Place, object: in active motion
   - Subject: passive

   The basic image (2) is in motion, or both dimensions move (1 and 2) in different ways. Where there is tension from two directions, the elementary forms multiply and change unevenly or unevenly (unevenly, in motion; evenly, at rest).
   Movements against one another or reinforcing one another. Communication to and from, or interwoven counter-movements. Where there are two factors of mobility, reciprocity between them gives rise to symmetry. Movement and countermovement result in balance.
   Multi-dimensionality consists in a combination of movements: Two-fold (two-dimensional) or three-fold (three-dimensional) main movement.
   Where the main movement is three-fold (three-dimensional):
   - What has moved? Everything.
   - What has not moved? Nothing.

The relation between object and subject can be reversed, that is, the main action can be in the landscape, or the main action can be in the artist. Conflict between the subjective and the objective yields perfect unity.
4. The sensation of weight as a formative element.
The balance of forces. Weight and counterweight.
Quantity, quality, and their relativity

We were speaking of a tightrope walker as the extreme example of a symbol of the balance of forces. The tightrope walker with his pole as 'symbol of the balance of forces'. He holds the force of gravity in balance (weight and counterweight). He is a pair of scales.

From our study of the elements of perspective we derived this symbol as an indication of the meaning of vertical and horizontal. The extension of the near horizontal line to the horizontal plane or simply to the horizon gave us the spatial form of this symbol:

"Horizon crossed out; "Thus the scales will be as useful to me as they are to the tightrope." 

Today I should like to investigate the balance of the forces on either side. By this I mean the forces resulting from the gravitational pull of the earth. Thus we shall speak of gravitational balance."
Forces of this kind seem closest to us, because we ourselves are physically subject to the same laws of gravity. For the present let us presuppose the solid ground on which we stand, and let us not, as we do in exceptional cases, take to the water or the air. In this weighing, scales will be useful as to us as they are to the grocer in his shop.

Symbol of the scales is the balance of vertical and horizontal (1, 2, 3). This is more or less what scales look like. Scales weigh two weights against one another; because there are only two, the weights can operate in a plane. For I can always situate two points, wherever they may lie in space, in a single plane. If we assume that the one plane has been correctly weighed, we can move our scales into a new position and weigh a second opposing plane against it (4).

Fully spatial scales would look like this:

In this case we have spatial scales on three axes; A—B, C—D, and E—F [5]. With this device we might measure the weights on the walls of a hexagonal room [6]. It would not be wise to carry out our first experiments with this little machine, which has already ceased to be simple. You will agree that we had better stick to a single plane. It does not matter whether these plane scales stand or hang (1 and 2); all that matters is the cross formed by the horizontal and the vertical. This is the spirit of the scales and we can safely omit the pans [3].
Now let me remind you of the complementary relation between lines and planes that we discussed in the lesson before last. The planes on which such plays of forces occur are usually limited. For example:

square, more or less like this: 

\[ \begin{array}{c}
  1 \\
  2
\end{array} \]

and with the new cross like this:

\[ \begin{array}{c}
  \times \\
  \times
\end{array} \]

If we take into consideration the complementary relationship between two views, this figure \([2]\) may be interpreted as linear or planar. From a linear point of view, it is a square with two diagonals; from a planar point of view, it is a square divided into four triangles. These four triangles arrange themselves, especially if our square is not quite perfect, into two sets of opposite triangles \([3, 4]\).

\[ \begin{array}{c}
  3 \\
  4
\end{array} \]

It is characteristic of their position that they strike each other with their points; the direction of the thrust is vertical-horizontal \([5, 6]\). Here we have the scales again \([7, 8]\).

\[ \begin{array}{c}
  5 \\
  6
\end{array} \]
The primitive simplicity of this particular handling of equilibrium has enabled me to use a kind of symbolic treatment. The result is symmetrical, because the weights on both sides are the same.

A state of balance deviating from symmetry might be illustrated with the image of the scales: in one pan, for example, two pound weights, in the other a weight of one and a half pounds and one of half a pound.

Asymmetrical balance

But there is more to it than that. We must operate with pictorial elements that can serve as a basis for a discussion of the sense of weight. First, a few cases in which there is surely no question of balance.
Difference in extension, more energy on the right side through addition, surface = measure.

Difference in tone value, right hand side weighed down with black energy.

Difference in coloured tone-value, right hand side weighed down with colour energy.

Difference in colour value, left hand side weighed down by colour character.

Now for correction:
In Fig. 1a we reach into the line compartment of our box of elements and put in what is missing on the left. (Correction to Fig. 1)

In Fig. 2a we reach into the black tone compartment and add a little square of black to the grey square. (Correction to Fig. 2)

In Fig. 3a we reach into the red tone compartment and proceed in the same way (Correction to Fig. 3).

In Fig. 4a we reach into the pure colour compartment and weigh down the blue side which is too light, with a bit of yellow perhaps (Correction to Fig. 4).

G the question of balance is formulated in terms of the three basic pictorial elements, the following extreme results.

Summing up:

Disturbed balance
Balance restored

Extension = measure (line and plane)

Tone value = weight (chiaroscuro, tonality)

Colour character = quality

With accurate dosage on both sides we may regard the balance as restored; but this balance will no longer be identical with symmetry. But of course, something more than this crude illustration will be needed for a complete and conclusive characterization of 'this side' and 'that side'. To illustrate them definitely as part and counterpart, we shall need a hard and fast local imperative. A cogent example is a good deal more than a loose comparison.
Here a local imperative of this kind has been added, i.e. a particular idea governs the situation of the centres of gravity [1].

Schematic compositions related to our studies of balance [1] and [2]

The A–B axis overhears with red has fallen to A and risen to B. Originally it was horizontal (a–b). These two axes, the original a–b and the new A–B have a single point in common, point C. C is therefore the fulcrum. The result of the axial rotation is that the red on the left is now lower than the light red on the right. Now dark red is added as a correction; it will restore new balance.

A little drama of horizontals interpreted in human terms: I have begun to lean (butward) and I have reached out with my right hand for something to hold on to, to stop myself falling. Or, transposing the action to the vertical:
The top of my body is too heavy, the vertical will topple to the left unless a correction is quickly made below. By spreading my left leg I broaden my base (2). The character of these two schematic compositions is centric, i.e. they depend on a centre.

If we conceive of a number of such compositional actions repeated from the bottom upwards, we obtain a series of such centres one above the other; and can no longer speak of a centric arrangement. This series of C points begins to look like a backbone, as you will see.

Suppose I to be a pedestal. II is a stone set on the pedestal in such a way that it barely escapes from toppling over. The energy that would make it topple is expressed by the arrow → and is measured in terms of weight g. Now if we continue this type of structure alternately on the left and right, nothing will actually topple. Each stone clings as if it were to the vertical axis, each one would like to make the horizontal relate at its point C\text{III}C, C\text{III}C\text{II}, C\text{II}.

The basic pattern of this construction provides the following structures (though there are other possibilities) [4, 5].

Figs. 3, 4, and 5 represented as a layout, taking account of the forces which are directed away from the vertical axis [6, 7, 8], p.511.
Opposite page left:
9859287921042863946

Opposite page right:
The right hand version shows a balanced,
slanted construction with pronounced shifts
from the vertical axis representing a deviation
from the symmetry in Fig. 6.

Linear balance structure from the watercolour
Grid 4: Divided group a.118.

C*, C*, C* are fulcrums. The series of C points looks like a backbone. Or if they were joined
by lines, a zigzag about the vertical axis (B) would appear as a further possibility.
Such structures (a little like towers) may be compared with a standing man. Whenever
the effort of keeping his balance becomes too arduous, he sits down and reduces it by
approximately half. If he goes farther and leans on something, only a vestige of balancing
activity remains, but still a vestige. For when a man faints, he usually falls off his chair.
The vestige vanishes completely only when he lies down. Then the man becomes a
block of stone.
Compositions of a horizontal character have something restful about them, compared with
vertebral structures (7 and 8).
The base broadens and with it the horizontal at the expense of the vertical.

An appreciable relaxation sets in, an epic tempo against the dramatic of the vertical, though, of course, this does not exclude the balancing of both sides. The vertical is still with us.

Balance is excluded only when the diagonal disappears, when the scales congeal, e.g. in the most primitive of structural rhythms, where there are only horizontal or vertical lines.

Now we come to the question of weight as it applies to the pictorial elements. When I ask: Do you consider this square heavy or light? – there is no definite answer. For if the answer were ‘light’, and I added a second, far smaller square your hasty answer would be invalidated. For now the square makes a definitely heavier impression. Now we can say, the big one is heavy in comparison to the little one and the little one is light compared with the big one. Relativities.

But what now? Don’t the weights tend to equalise each other, and why? The one is lighter in energy but much larger, the other is extremely heavy in energy, but small.
Now it is harder to decide which one is really heavier. In such a case our indecision implies a feeling of balance.

The effect of weight on the left is more a question of quantity, while on the right it expresses itself more qualitatively. Relativity! The notion that black is heavier than white applies only while we think of a white surface. In this case, if we disregard colour, black is the means of developing energy. The blacker the energy, the greater the impression of weight in comparison to the white surface. Another relativity.

But in the case of a black surface, black energy cannot express itself on it, if only because its heaviest development, the deepest black, would not stand out on such a surface. In this case, if we disregard colour again, white is the developer of energy, and the strongest effects are produced by the brightest white.

On a grey surface of medium tone, black and white can vie with one another as energies. Out of doors, that is, in the landscape, we can say that a white surface is present if the weather is foggy. The closest things, hence the heaviest, look particularly dark, while farther back things lighten progressively, merging at length with the background. On a dark night, light objects, such as lighted windows, produce the heaviest and strongest effects. And on a normal day we can observe the interplay of dark and light on a middle background. In physics we speak of specific gravity compared to water; for us there are different kinds of specific gravity: in comparison with white, with black, with medium (and with every intermediate tone).

The colour world brings in still other values, colours on a red background, colours on a violet background, etc.

Lighting in nature is largely a matter of few space and atmosphere. The scenery in nature is more a matter of light and shade, where light and shade do not exact their power of dissimilations, but where darkening, in color space, modulates distinctly in scores.

The examples illustrating the exercises show letters in balance or linear-active polyphonies; in solemn statics or canonic positions and in dynamic position, with one or more subjects interconnected.

A subject, E, pure static Two subjects, E, B Three subjects, Z, E, T

A higher subject, P, A, M P, R in dynamic position E, I, L in dynamic position

Note in Appendix
In our last lesson we noted the contrast between compositional and structural character. The most elementary structural rhythms made their appearance. Numerically they were expressed in small numbers, the sum of simple units: horizontal and vertical lines as the most primitive structural rhythms [1]. Linear addition of simple units [2, 3].

Repetition of the same unity in the directions from left to right and from top to bottom. A combination of the two directions produces the following structural design [4], which may be described as an addition of units in two dimensions. Though amplified by its two-dimensional direction, this picture still occupies the lowest rank in the structural scale.

The most primitive structural rhythm in the directions from left to right and top to bottom.
Analysis of movement in connection with intensity in Chess, p.194.

Measured by the norm, the movement increases in relation to the fixed dimension (3).

The natural progression of the lengths and thicknesses of lines and of their intervals (3).

The same progression covering and going between (3).

(Interpenetration of progression and regression.

Over the constructive point of view, not a result in itself but an expression of function.)

1. A regular, definite progression (as in the game of the circle and the concave, non-convex, continuous progression, or movement, or movement between movement) (3).

'Cf. the construction of a natural progression, p.154.
On the same page: 'Possible amplification. Mix them up with preserving the thickness and length of the lines'.

Progression

The local change of position in Chess leads to the subsequent analysis of movement (8).

The proportions of the lines characterize the varying progress of the movement; the intervals indicate the measure of time.

Each progression results in the spatial factor.

The movement takes on an absolutely different character (2) when the same design is both visual and includes the measure of structural repetition (7).

In a pictorial representation of progression on two dimensions, the movement, despite its configuration, achieves balance, where the values are equal to, it comes to, a standard.

In Chess there is a visual division given, while in architecture it should be thought of as the basis of measurement or function.

'Cf. as the analysis of motion: Movement and countermovement, treated as a quality, p.156.

The dimensional concepts:

Line = what can be measured

Time value = questions of weight

Colour = quality

Towards a theory of form-production, p.156.
In the use of measure and weight: This new structure is one step higher. Its unit is one plus two: 1 + 2.

In terms of measure

\[ 1 + 2 + 1 + 2 + 1 + 2 + 1 + 2 + 1 + 2 + 1 + 2 \]
represented in numbers

Or this structure:

In terms of weight

\[ 1 + 2 + 1 + 2 + 1 + 2 + 1 + 2 + 1 + 2 \]
represented in numbers

Wishing to attach a hook to a picture frame, I measure the top most carefully to find the centrem. I fix my hook exactly in the centre and feel sure that everything will be all right. But in the end my picture slants. Why does it slant? Because the wood is not of the same density throughout, or perhaps because the glass is thicker and heavier on one side.

In short, I have made the mistake of measuring rather than weighing. In another case I wish to cut a long wooden pole exactly in two. It seems to me that the simplest way is to balance the pole on something with a knife-sharp edge. Delighted at my cleverness, I cheerfully apply my saw. The result: two parts of entirely different length. How so? Here again the wood must have been uneven in thickness and weight, and I have made the mistake of weighing rather than measuring.

So we have measure on one hand, weight on the other. I return to our two structures that we have called one step higher, and consider the numerical series that is common to them:

\[ 1 + 2 + 1 + 2 + 1 + 2 \]

Nothing changes in this series if I represent it like this:

\[ (1 + 2) + (1 + 2) + (1 + 2) \]

And this too will be the same:

\[ 3 + 3 + 3 \]

and this is a regular repetition of a kind of unit (made up of three parts), hence a pure structural matter.

The following diagram gives a picture of this algebraic manoeuvre:

Thus \[ 3 + 3 + 3 = 1 + 1 + 1 + 1 + 1 + 1 \]. The Roman one stands for a higher unit.
The chess-board. If we expand Fig. 3, p. 220 (weight structure) in two dimensions, the vertical sum of fields [1] is:

\[11 + 10 + 11 + 10 + 11 + 10 = (11 + 10) + (11 + 10) + (11 + 10) = 21 + 21 + 21 = 1 + 1 + 1 \text{ etc.}

The horizontal sums present the same picture, that is, 1 + 1 + 1 etc. in a horizontal direction [2].

Two values of different weight added to form a rhythm which when repeated produces a diagram of linear two-part time [4].

Extended in two dimensions in the simplest synthetic order, the diagram becomes a chess-board.

The two dimensions combined (the sections in Figs. 1 and 2 [3]).
Analysis of movement in connection with

Light-dark movement
(a) Progression towards a primary contrast,
(b) Regression towards secondary contrasts.
The grey base is the middle of the room.
(c) Progression towards a primary contrast.
White base.
(d) Progression towards a secondary contrast. White base.

Regular stepwise movement from white to black and back again "Light-dark movement on a static surface": (3).

The independently structured movement from light to dark (triangular and dispersed base-shaded): (4).

"Even structure makes for continuity without progression and without the intention of increase or decrease. The individual forms at any rate, are reminiscences. Myself I go forward, but despite their multiplicity the resulting forms are unproductive. Regularly measured multiplication is stagnant." (5)

In possible, a new dimension of movement is added to the simple movement of measure and tensility from left to right and back again (displacement and change): (6).

The crossing of light and dark "progressive movement from left to right (horizontal) and progressive movement from bottom to top (vertical)": (6).

Where the two structures are combined, the diagonal direction from lower left to upper right determines the path of movement: (7).

"This is the path of pure source, forms corresponding to the initial forms. In this case the direction of increase is profitable. Already enough to make up the mind of the opinion!"

Summary:
The movements in the dimensions "left-right", "top-bottom", "left-right-bottom" are measured simultaneously in several dimensions by the broad axes. The structural parts differ in measure (quantitatively) and in colour (qualitatively).

"The crossing of light and dark progressive movement from left to right (horizontal) and progressive movement from bottom to top (vertical)" (6).

"1 - 11 square as the regular surface unit."

"Progression / progression " add up to the diagonal zone (10)."

(1) (The main directions, given by the parts, make this the symbol of spatial dimensions.)
The two directions add up to Light and Heavy.

Light, considered by itself \[\begin{array}{cccc}
\square & \square & \square & \square \\
\square & \square & \square & \square
\end{array}\]

Heavy, considered by itself \[\begin{array}{cccc}
\square & \square & \square & \square \\
\square & \square & \square & \square
\end{array}\]

Consequently this entire square breaks down horizontally and vertically into pairs of neighbouring fields [1]. The result is a cluster of square units each having four parts and a value of six.

The combination of the two dimensions produces this composite unit

\[\begin{array}{ccc|ccc}
\square & \square & \square & \square & \square & \square \\
\square & \square & \square & \square & \square & \square
\end{array}\]

or \[\begin{array}{ccc|ccc}
1 & 1 & 1 & 1 & 1 & 1 \\
2 & 1 & 1 & 1 & 1 & 1
\end{array}\]

A single unit of Fig.1, whose value is 6.

The same spacial unit of a two-dimensional composite six repeated. The repetition of units is the basis of the rhythmical beat [2].

Numerical representation of the six-part unit.

\[\begin{array}{c|c|c|c|c|c}
6+6+6 & 1+1+1 & 1+1+1 \\
6+6+6 & 1+1+1 & 1+1+1
\end{array}\]

\[\begin{array}{c|c|c|c|c|c}
6+6+6 & 1+1+1 & 1+1+1 \\
6+6+6 & 1+1+1 & 1+1+1
\end{array}\]

This regular repetition of a higher unit is again characteristic of structural form.
Conceived as a mesh, this rhythm is of the same time structural (i.e. simply repetitive).

In linear terms

\[
\begin{array}{c|c}
0 & 1 \\
\hline
1 & 0 \\
\end{array}
\]

hence

\[
\begin{array}{c|c}
0 & 1 \\
\hline
0 & 0 \\
\end{array}
\]

purely linear, without weight

Linear variants

Further variations at will, by repeating composite units designed for the following kinds of repetition: reversal, displacement, reflection, and rotation.

Such rhythms cannot be said to have an organic character. This is evident from a glance at the corresponding number scales. Every organism is an individual, that is to say, cannot be divided. In other words, one cannot take anything away without changing the character of the whole, or in living creatures, without disturbing or even destroying the function of the whole. Nor can anything be added. Our series and complexes of numbers keep their individual character.

If instead of \(1+1+1+1\) we write: \(4\times4\)

\[
\begin{array}{c|c}
0 & 1 \\
\hline
1 & 0 \\
\end{array}
\]

we write: \(5+6+6+6\)

\[
\begin{array}{c|c}
0 & 1 \\
\hline
0 & 0 \\
\end{array}
\]

or: \(6+6+6+6\)

\[
\begin{array}{c|c}
0 & 1 \\
\hline
0 & 0 \\
\end{array}
\]

\[
\begin{array}{c|c}
0 & 1 \\
\hline
0 & 0 \\
\end{array}
\]

We are easily reminded of the lower animals, consisting of only very few cells, or of the one-celled bacteria, which are only perceptible in the mass.

But there is also a great advantage in this indifference of structural rhythms to individuality: they may easily be linked with an organic, individual whole, in such a way as to support the character of the organism without opposing it in any way.

Thus they are suitable for putting life into thin areas of certain compositions; they have long been known as wallpaper patterns; and they lend neutral animation to the covers of books and portfolios.

Pure ornament is governed by primitive rhythmic (dividual or sometimes individual). It has no rhythmic relation to the inner creative drives of man.
These cannot, on the other hand, be reduced to single or similar numbers, but inexorably only to ratios such as \(2:3:5\) or \(7:11:18:17\) or \(a:b = b:(a + b)\), Golden Section.

Special case of dissymmetry, the Golden Section: \(3:5 = 5:8\) \(8:13 = 13:21\)

The smaller part is to the larger part as the larger to the whole: \(a:b = b:(a + b)\).

In a rhythmic individual whole, based on the Golden Section, the composite unit \(1=8:13\) is repeated.
Analysis of movement in 1920s II: City Castle of KR, p. 122.

Taut design - this is the stage preceding movement [1]. A simple principal movement or angular movement [2].

"Taut field principal movement" [5].

%"Taut field principal movement" [5].

Linear analysis of a part of City Castle of KR, seen in terms of ground-plan or section [5].

Spatial expansion through movement [5].

The structural characters are characteristically jointed into an individual whole. Structural units with a two-dimensional orthotope alternate with others projected fifth space.

The movement of the subdivisions is organically related to the principal movement. The movement in space and time is individual in nature and demonstrates the super-symmetrical character. Try to achieve the greatest possible movement with the least possible means (economy of means obtained by repetition of a limited number of simple structural elements) [1].

Mass, weight and their movements

The picture plane with movement intensified. Consider the synthesis of mass and weight.

"The mass is the casual state (state of rest) [1], p. 219."

The notion of inertia provides a solid basis on which to conduct the action in the action as a whole and in its parts.

"Starting from the norm, freely drawn steps are taken, leading to tranquility."

Acceleration and deceleration movements of mass and weight (density and extension). The direction of movement may be generally progressive or repressive.

[1] The movement is incipient when, among other things, the basic design is both perceptible and clearly defined. The movement grows and is measurable in relation to the other, fixed dimension. The movement in the plane of locality and colour is based on an idea of balanced masses. Individual colour actions contrast with the stratum-like representation of mass. Still, the decrease in the intensity of colour movement. The colour actions advance rhythmically and synthetically, keep the harmony lively. The rise and fall start from points at close. In the closed dynamic circle, to the value of simultaneity, the extreme circle and whole movement, where pure colour rules they bear influence, strong color is the next powerful of psychic energies.

Movement and counter-movement throughout the colour plane lead to balanced movement. An oscillating movement on the colour plane further, rhythm, rhythm, rhythm, rhythm, rhythm, rhythm, rhythm, rhythm. Uneven movement is identical within particular direction.

The basic: mass (static) and the dynamic: discharge of tension are treated as complementaries in the field of quality or colour.

"There are things in the place, scattered relatively, simple distribution of mass and weight."

1970s II: Linear analysis in Watercolour [3].

1970s II: Free-form sets in Watercolour [3].


Colour reduction in Grunewald, p. 39.7.

Cf: the peripheral colour revolutions, p. 468.

[2] On the basis of symmetry, it may be inferred that there has been a progressive contraction which has changed the dimensions of squares progressively of novel size. Assuming that the whole, taken field by field, contained equal quantities of colour, the colour dimensions when the dimensions are increased, are increased when they are diminished. As a result, the large areas have the same small masses in colour.

Simple and complicated movements seen as increase and decrease of mass and weight.

Comparison of mass and weight results in balance.

"Conspicuous size of mass and weight should be taken to mean that the highest density can occur on the smallest surface. Large surfaces reduce the density. Fission of the weight of the given area, and compensate for the reduced weight by an increase in surface movement. Thus balance invoc.

The mass is the stage of density of one element as equal another."

Wires the picture plane is static, there is a change in the regular protective relations, corresponding to the greater nudity of the basic proportions.


[3] The dynamic is in the action. If it results in, it is not static being, but action. Using normal means, through articulation, or movement, it is possible to capture the unique. There is an organic connection between the mass movement and the subdivisions of movement. Once you know what has stopped and what has moved, the pattern is clear.

Principle lesson: re-acted factors take precedence over unchanged factors. If the static relations are dynamically interchanged, they lose some of their identity of place. Movement taken from the foreground. Movement and counter-movement become more and more interlaced or interwoven with the interpretation of topographics, Pressure and counter-pressure in the modern.
The central opposition
Dividual/Individual

The question as to whether a thing is dividual or individual is decided by the criterion of indefinite extension or definite measure. For where there is indefinite extension, arbitrary divisions can be made without changing the structural style. But where an individual has definite measure, nothing can be added or subtracted without changing it into another individual.

Symbol of dividuality: The structural as indeterminate number. The element may be either line (measurement) or tone value (weight).

Symbol of individuality: Nothing is repeated, every unit is different from every other [1]. Indeterminate number, with individual stress (e.g., by difference in colour) [2]. Negative stress on the individual (gaps, elimination). Negative whole [3].
Additional possibility: positive and negative combined.

1Note by Rie: The question of the articulation, natural or otherwise, of matter (Arrangement of the atoms in the molecule of a compound, expressed by the structural formula.)
2Style: The question is the brane of the diurnal manual movements. Where did these traces become visible?
3Rhythm: The question of whether a number such as 2 or 3 (or possibly 1, 4 as 2 + 2 or 8 as 2 + 2 + 2) is repeated as the substituent of a unit? If so, we have rhythms.
4Dividual structure: The question of indeterminate extension of the units (dividual = divisible). Individual structure is present when the concept is positively stated.
Figure (1): Wool d'or. Paste and pigment on paper.

**Dividually - Individuality**

- Indeterminate extension of a two-part unit

- Rhythmic repetition, dividual

- Rhythmic repetition '2', heavy-light, dividual

- Rhythmic repetition, '3', dividual

- Two-part rhythmic unit, dividual

- Three-part rhythmic unit, dividual. Qualitative accent: rhythm based on weight.
Other possibilities of dividual structure

The mode of treatment depends on our feeling about the obstacles we are facing: are they hard or soft?

Combination of the two aggregate states solid and liquid

Liquid above

solid below

Light murmur above, hard ring below

Slightly obstructed flow as of water over pebbles

Repetitive accent on units made up of higher and lower parts

'Gaseous', a refinement of liquid (evaporation), "Cloudy"
A small significant number keeps telling us that any division would destroy the character.

The two structural types
divided and individual combined

Formation of a higher intermediate unit by the overlapping of primary units.
3 = Intermediate units

Change of structural character
coinciding with a higher articulation

Formation of intermediate
units by structural overlapping
or interpenetration
Fundamental possibilities of movement with divided-individual structure
Types and directions of movement

Symmetry is repeated. Linear-active, planar-passive, same measurement and direction. Divided, one-dimensional (purely linear) [1].

Altarnating heavy and light in one direction [2].

Progressive change, increase or decrease [3].

Shifted or reverse direction, equal intervals, there and back [4].

or alternating [5].

Movement and counter movement. Progression in two directions, based on progressive change. To and fro [6].

Even or uneven movement, measured from a fixed limit (structural change), from an accented centre, or from the boundary of an individual unit [7].

Another possibility: movement from the inside out or from the outside in [8]. The whole is in movement, tending towards total fulfilment.
Number: indeterminate, diurnal
(A special case of rhythm: 'one or one and one')

Determinate, individual or rhythmic

Indeterminate number, diurnal

Determinate number, individual

Frau synthesis with change of structure

Here two independent concepts meet: 'rhythm' and the distinction between diurnal and individual structure.

By way of clarification: the concepts are mutually independent in so far as both diurnal and individual formations can be rhythmic. Both can be rhythmic if their structure is based on one of the numbers two, three, or four. It can also be a recurrence of a pure unit, or it can be based on five. Or it may be based on 6, 8, 9, 10, if these higher numbers show distinct concomitants indicating 2, 3 or 4.

The repetition of a composite unit is purely rhythmic; its subdivisions correspond in principle to the numbers 2, 3, 4 (2 x 2), 5 and 6 (3 x 2 or 2 x 3).

General structural concepts: The concepts of change, uniformity, multiplication, and displacement are general structural concepts that apply both to diurnal and individual forms. Certain activities produce very definite structural forms which can observably become individual. The individual is paramount. It is the highest structural character, even if it takes up less room. In this case its superiority lies in the quality or intensity of its special character, even if it seems limited in extension and inferior in position.

One brick on two bricks. The wall is a horizontal strip with alternate displacement of rows by half a unit.

Bricklaying—a double three-part rhythm (six-part time).

Criteria: The juxtaposition of like and unlike parts. Uniformity: like forms. Change: varying forms or the interpretation of different forms. The characters may be more or less independent of one another. Crucial are the positional relations between the units. Quantity determines the structural impression. The larger number, 'major', as an indeterminate number of structural units, constitutes the norm. 'Minor', the smaller, determinate number, appears as its opposite and tends towards individuality. 'Major-minor' are related in the same way as active-passive.
Organisation of structural characters. Decrease and increase of composite units.

The linear expression of structural ideas is not the only one. Planar formations can also be expressed in tonalities or colours, which may also serve to make the parts work towards the whole.²

Square structuring can be accomplished in colour with two elements

Progressive rows mark a change of position. Every or every other movement on the plane (as the linear stages of motion p.299), experiments using the shortest possible amount of means. See 1950s in City Centre of XII, p.299.

Where planar units meet in a line a change of element is necessary. Where planar units touch in a point no change of element is necessary

² Accretion of colour or tone value. The major as predominate colour. The minor brought out by means of contrast.

Simple higher structures combined with rhythmic pattern
Basic possibilities of structural formation
(linear-medial = planar-medial):

Uniformity

Alteration

Progressive change

From the inside out or from the outside in

18241320: Mixed, Tempera on canvas.

The question as to what is individual and what is non-individual implies the existence of a relation. A field is divided (in line here and a line there). The organisation becomes truly individual in the figurative areas when its parts bear a character beyond rhythm.

A 'composite unit' embodies progressive rhythmic change: movement in long and short shape, displacement, rotation, uniformity, reversal; increase, decrease of the structural elements. Mural allows a synthesis of distinct and individual structuring. (Mural effect with different types of linear progression.) This higher unit meets the problem of proportion.
Rhythmic structuring with flexible base. The spatial relationships between units: the question is, how do the units relate to each other and how can they be represented on a flexible base?

Figure on static base.
Constructive foundation

Regular grid and figure, regular division as the norm

The grid lines are somewhat displaced.
This is what happens to the figure

The grid lines are stretched and squeezed into a perfect angle.
This is what happens to the figure

Irregular projection on an uneven plane. Attempt to produce a rhythmically distorted structure while preserving regularity.
(Conversion by controlled change of proportion.)

Surface measurements
(with regular and irregular division, flat bin-dimensional).
Broken - planar angles, three-dimensional.
Solid - material to be three-dimensional.
Broken on periphery, e.g. the top of a cube or sphere; three-dimensional.


Irregular projection on an uneven surface. Where the base is flexible the regular projective relationships are modified (suited out of shape) in proportion to the distortions of the base [2]

Projection on an uneven surface.
Change of inner and outer forms.
A certain rhythmic structure is added.
Linear analysis from 1940/N 14: Church [3]. [Cf. p. 194]

Irregular projection with highly mobile (perhaps fluid) base [4]

"Some of the forms move outward, some inward." Rhythmic structuring with simultaneous properties of base and division.
Note in Appendix.
Height 50; Mountain game. Gouache.
Cf. Hatch 15: Clurcius, p.194
and 146014: Gouache. Gouache.
Colour reproduction in Grahmann, p.380.

Increase in movement produces more fluid
relations, e.g., in water or in air; the ideal
dynamic media.

Flatt projection: illustration on regular base 1-25 (1).
Irregular projection on uneven surface (1-28), 'pulled out of shape'
by changes in the ground structure (2).
Discussion of the central antithesis: Dividual-Individual

Microscopic:
The material structure of a flower, structural. Division here and there produces no essential change in character. Change not crucial, hence divisible, dividual.

Intermediate

A flower seen as three parts or as seven parts
individual, indivisible, i.e., the number cannot be changed without changing the character.

Macroscopic:

By division new structures
By diminution new structures
By increase new structures

The meadow with many flowers, general. Division here and there does not produce a crucial change, hence divisible, dividual.

hence indivisible or individual.
Lower and higher Individuals

Rhythmic-individual
one-two
with equal stress

In rhythmic individuals
one unit is
perceptibly repeated.
Uniform, three parts

Rhythmic individuals
repeated in two parts with
composite unit

Two parts disparate,
no longer rhythmic because
there is no repetition

Three parts disparate,
beyond rhythm

Two- and three-part
composite rhythmic individuals

*Two- or three-part unit, L repeated.
Characteristic: repetition.

The smallest individuals are the simple rhythmic ones, then come the composite rhythmic ones, and finally those that are not rhythmic (individual) or those that are beyond rhythm.
Dividual-Individual synthesis

Combination of two structures: Individual 'I'

(accented by use of different colour)

Means:

Accented or
unaccented line.
Individual characterised
by shift of position

Examples of dividual-individual synthesis:
1923c:8: The cliff, p.102.
1923b:7: Chant and speech, p.136.
1923b:5: Evening in Egypt, p.145.
1923b:2: In the streets of his hometown, p.278.
1923a:8: On the way, p.295.

Analysis and synthesis, shown separately in
images [7].

Example of synthesis.
Linear analysis from 1923c:10: Measured on the
border of the fault country, Watercolour [3].
Note in appendix.

Means of representation: Combination of possibilities

<table>
<thead>
<tr>
<th>Individual miner</th>
<th>Dividual major</th>
<th>Synplied synthesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of units 3</td>
<td>Number of units 42</td>
<td>Number of units 13 + 9 + 21</td>
</tr>
</tbody>
</table>

The formation of organs with regard to their interaction in forming a whole

Three-part polyphony

Analysis of independent voices:
One colour divided [1].
One voice subdivided
close-bream horizontal lines [2].
One voice subdivided
current vertical lines [3].

Synthesis: three-part polyphony
Klee in his student years:

"Within the will to abstraction something appears that has nothing to do with objective reality. Free association supplies a key to the fantastic and formal significance of a picture. Yet this world of illusion is credible. It is situated in the realm of the human."

"Cf. the exercise on p.280: A composition made up of I. individual and II. structural rhythms. They must support each other in an organic whole.


Structures in elevation, in part

The relation between the individual and the dividual belonging to it. In the higher unit the limit of the perceptible is always reached. Perceptibility does not go beyond this limit, but remains within the perceptible whole, entering into its parts, its dividual rhythms. Thus the lower is always the dividual.

For example, the fish seen as an individual, breaks down into head, body, tail, and fins [1]. Seen dividually it breaks down into scales and the structure of the fins [2]. The individual proportion is determined by the relation between 1, 2, and 3 and cannot be essentially changed; in any case, nothing can be omitted. A few scales may be missing from the body, but we cannot do without the head, the eyes, or any of the fins [3]. The dividual structure of this fish is variable in so far as it matters much less whether it has 300 or 350 scales than whether or not it has a head. Thus the distinction between dividual and individual involves a value judgment.

But is the fish always an individual? No, not when it occurs in large numbers, not when "it’s teeming with fish", as the saying goes [4].

Fish with scales

When it’s teeming with fish, we have not one fish but many, we have a fish-pond or an aquarium [4, 5]. In this other fish-tank I must neither add nor subtract anything [5].

Exhibition of fish-tanks: many fish-tanks, arranged rhythmically, a cubical tank alternating with a spherical bowl [7]. The longer and more indefinite the series, the easier it is to add or subtract a few without making any essential change in the exhibit. In the same sense I can line up series of concepts (e.g. sound, syllable, word, sentence, etc.).
We can perceive rhythm with three senses at once. First, we can hear it, secondly see it, thirdly feel it in our muscles. This is what gives it such power over our organism.

The lowest rhythmic units:

\[
\begin{align*}
\text{Temporal} & \quad 2 & 1 & 1 & \quad \text{Variant} 4 & 1 & 1 & 1 & \quad \text{Variant} 5 & 1 & 1 & 1 & 1 \\
3 & 1 & 1 & 1 & \quad \text{Variant} 6 & 1 & 1 & 1 & 1 & \text{or} & 1 & 1 & 1 & 1 \\
\end{align*}
\]

Point of departure: the execution of acoustic rhythms by tapping with changing emphasis. From quantitative expression without accent to qualitative with accent.

Basis No. 1

Without accent

Basis No. 2

With changing accents

Basis No. 3

Basis No. 4

Basis No. 5

Basis No. 6

Another example of qualitative accent: Paganini.

The same unit with changing rhythmic emphasis.
Human rhythms
Man breathes in and out
A breath in, out (one, two)
The rhythm of walking.
Disjoint rhythm when the walk is of some length.
The human trail, e.g. footprints in the snow
In the pictorial realm the advance of time brings with it a movement of the picture plane.
Made into measures, a simple rhythm of movement
Physiological analysis of the blood circulation
Purely liquid
Rhythms in nature. Day and night

Rhythms in nature

Structural rhythms in stanza form
Planar arrangement [1]
represented numerically [2]
Stanza form [3]
with the accent on colour [4]

Further translations into the pictorial realm
linear points
planar points
planes, rhythmic

‘Fundamental distinctions: “organic rhythm”, e.g. the seasons, day and night, “organic rhythms”, and “cultural rhythms”.

‘Structural alternation of form or colour, e.g. 1 = red, 2 = yellow (with consecutive shift of colour).
The main characteristic of rhythm is the repetition of small groups with or without evident division.
I am going to reach out into the field of music. Here the basic structure lies in the boat. The ear hears the boat more or less subconsciously; but it is felt through the sound as a structural framework over which the quantities and qualities of the musical ideas move.

The basic beats are two and three:

- Two-part norm or two-part time

- Three-part norm or three-part time

- Variant of the two-part norm with three-part subdivision or six-part time

- Variant of the three-part norm with three-part subdivision or nine-part time

- Variant of four-part time with three-part subdivision of the quarters or twelve-part time
We can obtain additional planar images of rhythm by watching a conductor. We can learn from a quick glance at his baton.

In four-part time he strikes the first beat downward
the second upward to the left,
the third from left to right,
and the fourth upward from the right
to the starting point of the first beat.

The general picture is:

Picture of four-part time with a view to the dynamic [1].

Which fits admirably with the special qualities of verticals and horizontals [2].

The picture of three-part time is equally attractive [3, 4, 5].
Among these cultural rhythms the conductor’s two-part time; the accented first beat appears as a downward vertical.

In the pictorial field, the passage of time brings with it a movement of the ground-plane.

The movement of the conductor’s two-part time is reversed.

Rigid

One-part time fluid. Two-part ‘missa brevis’: Mozart, Don Giovanni. In this piece the rapid tempo blurs the two-part division that appears on the paper, and rhythmically one only feels the whole bars.

One-part time fluid

Two-part time loosely connected

This is how the conductor beats three-part time:

again the accented first beat is struck with corresponding emphasis, the horizontal is less important, and the third is again more like the first.

Variation with moving ground-plane

Rigid

Fluid

Three- and four-part time represented schematically. Possibility of coloured polyphony

Two-part measures loosely connected

Three-part measures loosely connected

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Four-part time with varying accent

1st principal part

2nd principal part

Subsidiary parts

Variation with moving ground-plane or progressive direction of motion

Five-part time with varying accent
Different expressions of six-part time

Spatio-temporal movement with moving ground-plane

Rigid (hard) 3 × 2

Fluid (soft)

Loosely connected (in two parts)
The limping raltics of five- and seven-part time are unevenly loaded two-beats:

\[
\begin{align*}
2+3 & \quad \text{(five)} \\
3+4 & \quad \text{or} \\
4+3 & \quad \text{(seven)}
\end{align*}
\]

In representing rhythmic structure we take the quantitative view; absolute time measurements are transposed into absolute linear measurements (quantitative rhythm) [1]. The disadvantage is that the units of rhythm (designated by bars) are not strictly defined by linear measurements.

Where is the dot?

What do special symbols of this sort mean?

They indicate different degrees of accent [2]. This points the way to another kind of picture that will do more justice to rhythmic structures and clearly bring out the quality of the measures. It consists in representing the relations between emphasis [3] in treating the rhythmic structures qualitatively (accented or dynamic rhythm) [3, 4, 5].

Constellation with inner structure. Schematic extract from the waterlily:

1988/7 4: Something new in rigid form.

280
The form of four-part time, gently curved (factual rhythm)

Many beats in four-part time linked by rhythmic connections
(Dynamisation of the factual rhythm)

1936?/1940? : Hinter stroken of the bow. Oil on plywood.
On this foundation I can now try to execute a musical theme pictorially, whether in one voice or polyphonically. I choose two bars of a three-part passage by Bach, and micro-copy it according to the following scheme (1).

Since music without dynamics sounds mechanical and expressionless, I select qualitative representation C and give the line more or less weight according to the tone quality, while the quantitative representation in B expresses itself in the vertical lines for bars and parts of bars. (Example from a three-part passage by Johann Sebastian Bach; footer attached to p.284.)
Key of Fessis mur

Pencil drawing done on trip to Egypt in the winter of 1929-1930.

Rhythmic forms with many parts, gently curved.
Factural rhythms
A number of things may be learned from the example of the three-part passage (folder), which is an attempt to represent in simple pictorial form an object that is abstract and at the same time compellingly real.

First we learn that such representation is possible. Next we perceive the vertical and horizontal relations between the two or three 'voices'. And we see how they are related in respect of individualization. Sometimes two, sometimes three voices sound at once (and there might be just one). The two voices (second and third voices) of the first measure are very different in individual quality. The lower one is clearly structural in character while the upper one is individual. Then the first voice comes in a little below the second, tries to jump over it, but does not succeed at first; only after the second voice has paused for a moment, does the first become dominant. With the individual entrance of the first voice, the second voice is reduced to a structural character and takes a register in harmonies contrasting to the third, which descends a little at this point, so forming an arch beneath which moves the first, individual voice. After a resigned pause, the second runs parallel to the third. From the very start the third remains faithful to its structural character, up to the point where the second begins to run parallel to it: here we can discern a timid attempt at individuality.

A glance at the quantities in the example (folder) also teaches us that the differences of measure are based on simple numbers not one another. If very small numbers were related to very large ones in this example, it would mean that the music contained ornaments which, when used frivolously, are called flourishes.

Synopsis: Temporally speaking: the accent is anticipated, moved from its normal position by the preceding unaccented note. Positionally: one or more dividing lines are bridged over by longer tones (crossing bridges).
Two- and three-part time as elastic blows
Facultal rhythms
Two-dimensional plan of
three- and four-part time
We assemble objects but the relationship we create between them can be plausibly experienced only in fragments. Often it is suddenly interrupted; then we can no longer follow our idea of the object (or the law). Memory, digested experience, yields pictorial associations. What is new here is the way the real and the abstract coincide or appear together. Often an organic context works with elements that can be read abstractly.

Wave-movement as two-part time

Wave-movement as one-part time

Note in appendix.
Exercise:

A composition of
1. Individual and
II. Structural rhythms.

Work the two together organically so
that they support each other.

Klee to his students:
This formation is arrived at by a successive
sifting out of parts of the total form.
Within a composition, one and one, line and line
or plane and plane, need not necessarily adjoin.
There can be a dual figuration expressing itself
in the independent contribution of plane and line.
Organic contrasting empathy. But the parts
must move together and move apart organically,
harmoniously. There are many kinds of
composition. Among them we can distinguish
two that may be termed static and dynamic.
What leads to a statics is the static, what
undergoes movement is the dynamic. There we
have two more characteristics.
A synthesis of formlessness and movement can
result. The two forces must then move in an artistic
part so that each will stand in its proper place. When
the structural is taken on rhythmic variety, when it is
particularly noticeable at certain points, we may
speak of a definite (i.e., individual) structural
proportion.

Balance between statically and dynamically
accented structural units and individual rhythms
(cohorts of complementarity). Space-time
relation experienced in fragmented Division and
connection as consistencies of structural form
(tensor resonance and general resonaence).
Now in appendix.
Combination of structural and individual rhythms
Primal motion as norm in the cosmos

At our last meeting but one I pointed to repetition as the hallmark of structural rhythms. On the strength of a few elementary structural examples, we arrived, weighing or measuring, at series such as:

1 to 1 to 1 to 1 to 1 to 1
or 1 to 2 to 1 to 2 to 1 to 2
or 11 to 10 to 11 to 10 to 11 to 10,

for which we substituted 1 to 1 to 1 to 1, taking the Roman one to stand for a composite unit.

In the two-dimensional realm, on a plane, we arrived, in place of these series, at complexes such as:

\[
\begin{array}{cccc}
1 & 1 & 1 & 1 \\
1 & 1 & 1 & 1 \\
1 & 1 & 1 & 1 \\
1 & 1 & 1 & 1 \\
\end{array}
\]

In contrast to these types, we considered individual rhythms, and took as their basis numbers from which the repetitive factor is excluded. The prime numbers seemed particularly suitable:

3 to 5 to 7 to 11 to 13 to 17 to 19 to 23 etc.

In the following exercise which I called "Combination of structural and individual rhythms" I warned you against calculating, for theory after all only means arranging things that are present in feeling and plays only a secondary role in the creative process, namely the role of criticism, which sets in afterwards. A few solutions to this problem gave evidence of both talent and intelligence.

1922/23: Torres with flowers. Oil.

*Amazing what happens when everything is cut off. When none of the vertical lines is fully present in the picture, this produces something remarkable in the way of expressions. A blend of the pictorial space, so that only a part of the whole is realized. One is crippled to put many many things into the picture without over-crowding. This last extension of the pictorial space provides a kind of liberation to brutality.

It is very interesting, let us look into the mechanism. The absence of the components seems to express something sudden. Here you have a contrast in which finite and partial forms play a mordent role.

The negative question is how the cutting out is done. The orisons might lose accidental or conditional. That would be overwhelming. It is not the case, we have the impression of being able to see only a part, that all the rest is absent, and that this absent part might be manifest. What is essential is that the most interesting and most important part of the whole is brought out. Not the conclusion is static or synthetic. The static creates unity of the vertical and the horizontal on the basis of gravity. The dynamic is more curved. There is also a possibility of combining the two, but the inside and the outside can oscillate.*

Some of your sketches showed an intimate fusion of individual and structure: the structure was the handmaiden, following the path of the individual, step by step.

Let us suppose that Figure I represents the individual. Proof: there is no repetition. It begins like an upbeat at A with seventeen, then descends with the full force of twenty-three, bends off at an obtuse angle with thirteen, rises vertically with three, angles to the left with two, descends diagonally with nineteen, angles to the left with fifteen to the end point Z (and here I beg you not to take the numbers quantitatively but qualitatively). The results are three circumscribed planes of non-repetitive, that is, of individual character $F_1$, $F_3$ and $F_5$. "Footnote by Klee in the manuscript: "To start by saying that one discovered Columbus" isn't."

The fish as solution of the problem: intimate fusion of individual and structure is designated in this exercise as "Columbus" rap. Text and partial analysis p. 304 and p. 310. Illustration: the often reproduced picture 1835-8: "The golden fish. Oil and etching in limited edition, Turpont and all. Grasemann, p. 226."

Below: Study for drawing 1935.4.5: Flight from oneself (true version).
In Figure 3 the structural character is added. The fully weighted vertical breaks down into five times five (note the intersections), the individual three breaks into a series of threes; a few twos, threes, skews, etc. follow.

Concerning the combined figure [3] this remains to be said: the measurements of the individual rhythm are greater than the measurements of the structure, and the individual (line-) drawing is qualitative (or weighting) in comparison to the purely quantitative (or measuring) structure.

Not long ago I translated a musical figure into pictorial terms. So now I can imagine the reverse and ask myself how our individual with its structure would sound as music. Purely melodic, for certain, with the subsidiary forms as pure accompaniment. Five-part time in two-dimensional [1], and rhythmic-schematic form [2] (possibility of colour polyphony).

---

1. This way of writing (line-) drawing is intended to emphasize the act of drawing. More emphasis on the individual movement than on the material lines.

2. Analysis of musical notation from J. S. Bach, border opposite p.286.
In this case [1] we may speak of a drawing in two voices. The individual theme is not cut off repetitively from the structural theme as before (p. 299), but only here and there, not even in every part. Thus we cannot deny that the structural theme has a certain independence. It is aware of this and takes on a dynamic character in the drawing. The individual feels exalted by its higher nature, requires no special bulwaring of its ego, and runs along flute-like in quantitative silence, despite the companionship of the heavy structural instrumentation. The relation of the measurements in the two 'voices' corresponds to the relations of the first example (p. 297) and (p. 299). The measurements of the individual rhythm contain the higher numbers.

Example from the last work: 1905/VI 50:

Example (p. 297) or simplified as follows:

\[ \frac{2 \times + b + 2 n + 2 b}{2 \times + (n+1)} \text{ (vertical alternation)} \]

or summed up:

\[ \frac{(n+1)}{(n+1)} \text{ (horizontal parallels)} \]

In this linear representation of structure, the expression is purely quantitative. If we imagine the squares alternating in colour, we must bear in mind that different colours signify the strongest (psychic) dynamism, and in dealing with the individual, therefore, great restraint is recommended. The individual part of this example shows us a few divergent individuals without repetitions. Where they are subdivided, the division is based on individual numbers. Here the expression is accentual (weight) over against the purely quantitative expression (measure) of the structural part.
The main characteristic of rhythm is repetition. Even accentuation of movement modifies its regularity, lightens or relaxes, produces a positive or negative emphasis on the individual or individual. In the pictorial field the passing of time brings with it a movement of the ground-plan.学术isation is time and in different kinds of movement gives rise to different orders of magnitude. We have a ‘unity of method and purpose’ movement is characterised by shift of position. (Deviation from the normal norm. Varying intensity of movement results in limitation or amplification).

Relations between planes are a result of forces. In individual terms, ‘shape of plane’, the road travelled (movement). The articulation of movement and counter-movement makes for synthesis and balance.

In the tension between ‘spherical’ and ‘circular’ the territorial structures are larger (mean), the smaller structures finer (more distant).

Example:


Principles of movement;
repetitive rhythm, steady movement [1].

The regular accentuation of the rhythmic repetitions is modified by the intervention of a second active influence which limits an irregular or individual accent. Lowering and lightening, expansion and contraction with re-discovery of planes. The new movement brings a compromise between the active and the passive [3].

In terms of space and time, shifts of measure and weight, based on shifting centres [3].

Coping with movement and counter-movement (e.g., back and forth) [4].

Examples 1987/6: The lower standing man, p. 306.
1987/10: Saloons in German motion, p. 318.
1987/7: City as Two Levels, Pen and watercolour. Colour reproduction Gehmann, p. 308.

Comparison of the three examples: The first example [1] p. 306] was melodic with structural accompaniment—a dominant individual; the second [6] p. 308] was thematic in two voices with dynamic accent on the relatively structural part—a delicate individual (delicate and passive); and the third [2] p. 301] is almost a symbol of the happy individual, or of happy individuals, who can keep strictly to the structural law even over a wide area, without doing damage to their individual character.

I find inspiration for an additional example in a very pretty little collage on glass that came to my attention during our last exercise [5].
2. Interchange of loose and rigid structures. Polychromatic surface structure, individual structural rhythms, divided movement and tension in different directions (individual structure dynamic by structural rhythm).
1954 (p. 20) Juxtaposed countries.
1955 (p. 3) (Juxtaposed) rhythm.
1956 (p. 1) Collage and then what?
1957 (p. 3) Juxtaposed countries. Pencil.

'Structural rhythm': Rhythms consisting of structural components of climatic and individual types. In a living 'structural rhythm' there is a harmonious balance between structural division (individual) and individual rhythms.

It consisted entirely of square bits of paper (18) p.603), which, freely disposed side by side or overlapping, their positions ranging from horizontal-vertical to diagonal, produced a lively structural rhythm. Quite apart from their colour, the overlapping arrangement produced a dynamic extending from brightness to deepest dark. The collage was particularly rich in contrasts, because, as in the case of windows, the light was conceived as coming from behind.

Even in the deep dark tones there was a shift towards the individual. But the individual achieved its full dynamic expression in the rhythmic arrangement of the squares, organised according to their colour type: blue, red, violet, etc. The outcome was a highly dynamic individuality of colours, based on a tonal-dynamic structural rhythm. An additional possibility: A sweeping structural rhythm might be filled in with tiny individuals (individual-optimistic) [1].
Composite form:

1. Individual-Individual, connected by rhythmic structure (1, 2).
2. Individual structure on individual base (3).
3. Partial construction in rhombus, set insidically to good purpose (4).
4. Addition (a form combined with its reverse) (5).
5. Addition-multiplication (the schema of the sum) (6).

It is easier to bring a complex process to life if one uses composite components. Basic possibilities: forms composed of two or three elements. Displacement, mirroring, relation with motifs of composite form.

5. Fully constructive, partially constructive, or impressionistic (partially constructive, method: free choice of details).
In conclusion, one more variant, in which an accented line borrowed from some individual is divided individually and where, in each segment, the structured plane and the structureless plane face one another in such a way that the two types of plane alternate both horizontally and vertically [1] (let anyone suppose that you have to work according to rules).

Thus far we have moved chiefly in the form world of culture. We have built on firm support premises such as our earthbound nature, the constraints in our movement, our physical limitations.

The main symbol of our activity has been the pair of scales; the horizontal dependent on the vertical attraction of the earth on which we are compelled to stand.

The simplest symbol for the force of attraction is the plumbline; the simple vertical [1]. But the scales take the vertical into consideration; the vertical is their criterion for balance.

Thus we may say that the spirit of the scales is this cross [2]. Disturbances in the balance of the scales yield the diagonal [3]. And correction through counter-disturbances leads to this new cross, the diagonal cross [4].
Now where is the seat of this tremendous power of attraction? In the ground [1]:

or, if we know that this ground taken as a whole has the form of a ball, it is in the middle of this ball, the centre of the earth [2].

Physically we cannot as a rule get away from it; everything that is earthly must reckon with it. In particular, every stone used for building is possessed by this force, the sustaining pillars as well as the bridges laid over them.

Consequently we shall keep running into problems of statics. And our own physical-human dependence on this earth force helps us to draw inferences about our fellow sufferers, the building, the physical object.

As we know, the surface of the earth grows and when we dig we can observe different layers that run parallel in a horizontal direction.

Pressure and counterpressure lead to the formation of mountains

Or the opposite:
Relaxation of the pressure results in dislocation
In practice our small physical size and our limited scope compel us to start from the part of the whole.

But this constant, this limitation, should not deter us from knowing that things can also happen differently, that there are regions in which other laws are in force, for which new symbols must be found, corresponding to a freer movement and more mobile localities.

The atmospheric zone, and its heavier sister the watery zone, can lend us a helping hand by which eventually to reach cosmic space. In water, as every swimmer knows, the new element and its increased weight make the earth's force of gravity work upwards, in the opposite direction.

But with a little effort a diver can master the depths of the water like a fish, or like the bird that masters the heights of the air.

He must also make intermittent efforts like a mountain climber or a man climbing stairs. But here the fixed points of adhesion, the footholds, are eliminated. The rhythm of the swimmer's movements above or under the water is more relaxed, gentler, than the rhythm of walking on the ground or of climbing mountains or stairs. The swimmer in the air (the flor or glider) must become part of the machine and can, in conjunction with it, give
himself up to new kinds of movement. In a free balloon he doesn't do much. He entrusts himself to forces such as air currents or cool and warm air. The merging flow of air masses of different temperatures allows movement without resistance.

In cosmic space, finally, there are no longer either hard or soft cesures. Here primal movement reigns, movement as norm. Everything moves. It is an illusion to suppose that we as earthlings are standing still and the sun revolves round us. It is an illusion to suppose that the sun stands still and we on earth are the only ones moving. The suns have moving orbits, the planets have orbits attuned to those of the suns. The whole thing moves.
Getting back to our physical existence, let us take up a few examples which lie somewhere between the two.

Air. A cannon ball fired up into the air at a steep angle rises with decreasing velocity, turns, and falls back to the earth with increasing velocity. A two-part rhythm with flowing articulation: g [1].

Earth (mountain). A man climbing stairs with gradually increasing effort. A rhythm with rigid articulation: g [2]. A stone rolls down a steep mountain slope with increasing leaps. A rhythm with rigid articulation: g [3].

Earth (mountain) and air. Variant of example [2]. A rhythm whose articulation is partly flowing, partly rigid [4].

* Cessated: that articulation is "simultaneously" flowing and rigid. If the accent is put on "simultaneously", the sentence can be interpreted as referring to an intersection of the two types of articulation, partly rigid, partly flowing.
Movement in one direction, considered theoretically in relation to norm (N) and slant form (A).

From the psychological point of view, primary contrasts side by side give a powerful expression. Primary contrasts with something between them move apart and the expression is toned down. Full leaps come from greater energy than do half leaps. Secondary contrasts, even boldly stated, lessen the power expressed. Elaborated, they weaken it by being over-rich and lessening the tension.

Curves of a development involving the concepts "unalleviated primary contrasts" [1], "elaborated" [2], "secondary contrasts" [3 and 3a].
Water. The leg thrusts of a swimmer, a rhythm with loose articulation [1]. The watercourse. If I broaden my field of vision, I create a perceptible whole at a higher level [2]. I give the drawing new, wider limits, or within the old limits I reduce the content.

Air. In rising, a free balloon passes from a warm to a cool layer of air, then enters another warm layer, and finally a very warm one. A rhythm with loose articulation.
Cosmic and atmospheric. A meteor describing its orbit comes close to the earth and is diverted from its orbit by the earth’s attraction. For brief, critical moments it cuts through the atmosphere, and friction with the air turns it into an incandescent shooting star; just avoiding the danger of descending forever to earth, it goes on its way, cooling and losing its incandescence in empty space. A cosmic form with loose articulation.

Fluid-gaseous movement leads us to take short steps in the organisation of the picture (gliding succession of elements). Any longer step or jump approaches the realm of the solid, creates sharp boundaries that do not occur in the fluid-gaseous realm, except occasionally at the fringe, as at the edge of a pool of water, between mountain and sky, or on the horizon (symbol: the stairway).

The relevant movements and means of expression: dynamic-adjacent and static-contrasting.

Exercise: Combination of rigid and flowing (or loose) rhythms.
The ultimate result should be a composition.
The results of earlier exercises may be drawn in.

For example:
1. Give rigid rhythm to the individual and fluid rhythm to the structural, or
2. Give fluid rhythm to the individual and rigid rhythm to the structural, or
3. Let two individuals work against each other, one fluid, the other rigid.
2. The natural organism of movement
as striving for movement and execution of movement
The function. Organic combination of two or three factors

Monday, 13 February 1922

I shall begin today by criticizing a faulty solution of the last exercise. This doesn't mean
that there were fewer good solutions than before, and I have no intention of finding fault
with the author of the false solution. I merely wish to take his mistake as a basis for a
discussion from which we can all learn and benefit.

The exercise was based on the preceding theoretical remarks on rigid articulation and
loose articulation. It was:
Combination of rigidly articulated characters with loosely articulated characters into an
organic whole (a composition).

Here I made a few suggestions:
First treat the rigid articulation individually and use the loose articulation to support
that individual to which it is subordinated.

Or:
Second, restrict the loose articulation to the individual and (conversely) keep the rigid
articulation structural.

In music these two ways of handling two characters are designated as melodic (solo
voice and accompaniment).
Third, I suggested that you let the two types of articulation fight for equality; in music
you would call this thematic treatment.
Or, fourth, treat both types of articulation equally, so that they do not conflict but complement each other in a friendly way, each in turn letting the other gain the upper hand. Another example of thematic treatment.

One of you chose very simple forms and, by the dynamic use of light and shade, rhythmicized on the one hand straight lines: and on the other hand circles:

Are these two characters appropriate examples of rigid and fluid articulation? To begin with the first character, what is this?

This is a plane verging on a straight line running in this + or this − direction.

And what is this?

This is the rigidly articulated growth and diminution of a series of planes verging on straight lines.

Thus the first character [1] fits in with the exercise. But what about the second one? Is the increasing and decreasing row of circles appropriate to the exercise?

Yes, for the articulation at a common point cannot be termed rigid, particularly as Figure 6 permits of other interpretations, as in Figure 7:

or as in Figure 8:

or their variants [9 and 10]:
Thus the row of circles as fluid or loosely articulated characters is quite in keeping with the problem. But how are the two characters related in the solution which I have questioned? If we had on one side an individual, on the other a structural character, we might know what to do with them; but here both characters are equally undeveloped.

My recollection is that they were related to each other like this:

or actually like this: And what does that mean?

As far as our exercise is concerned, unfortunately it means nothing. In itself of course it could mean something, a unit with two or three parts; in everyday life perhaps a lamp with a base, a globe, and a cylinder

or a pot-bellied vase: or the pendulum of a clock: or just about anything:

The problem: 'Fusion of two characters' no doubt permits of many different kinds of solution, but fusion into a single thing is not possible in this case, for

is not an organic combination of circle and straight line!

Nor is the repetition of these themes a solution to our problem.

Perhaps we can appraise the situation more easily if we transpose our forms into matter. Then we might conceive of a row of unequal sticks, a bit like piano keys, each with the top of a fin lying over it.

In this case we no longer have unified objects but rather two material items without visible relation between them, just one on top of the other, quite meaningless.

In short: two unrelated heterogeneous objects.

So we're back to nothing! What should we do to make something of it? To go on with the material conception, let us keep our row of unequal sticks; but instead of the tin spheres let us set target discs or optical lenses or glass balls on top of them. And we shall have something 'visible', namely a pictorial expression of the relation between two heterogeneous objects (1. 2. 3. 4 p.331).
What sort of relations between the two characters have we here? Onslaught of the aggressive straight lines against the static circle \([4]\), defeat of the straight lines as long as they are within the dangerous realm of their adversary. Struggle at the expense of the straight lines. Victory of the fluid over the solid character \([1, 2, 3]\).

The following examples \([5, 6]\) show another type of relation between two heterogeneous factors.

Intensely aggressive, the straight line becomes an arrow in flight and triumphs over the circle. The circle succumbs visibly \([5, 6]\).

Again the circle is defeated \([7, 8]\).
So much for types based on conflict. Let us go on to those showing adaptation. Here the straight lines avoid battle. Adaptation by evasion; in the first case they go round on one side (1), in the other they split and go round on both sides (3).

![Diagram](image)

Or the circle avoids the battle by adapting itself to the straight line and becoming an ellipse (3).

And here, finally, we have a type in which both characters adapt themselves. Each meets the other halfway and changes its shape (4, 5).

The circle is no longer a circle, the line is no longer straight. Further examples would contribute nothing essentially new; I shall limit myself to these few. According to the spirit of my composition, I accent one or the other of these typical motifs, to produce a figure of struggle or of friendship. The battle may be fought with varying intensity, and the friendship may be based on unilateral or mutual adaptation.

Our interpretation of the constructive process can become still richer in relationships if I call the straight line masculine on the basis of its spontaneous activity and the passive curve feminine.

![Diagram](image)

But, in the example we are considering, both the themes and their compositional elaboration were so unrelated that one might say: the men are monks, the women are nuns, and though the two cloisters are right next door to each other, no life can spring from a representation of this sort.

So far my discussions of the structural concept have dealt with the most primitive structural type based on repetitive rhythms.

The concept of structure in nature

1 Structural concept in nature: the grouping of the smallest bodies in matter, e.g., cellular or tubular bone corpuscles. A "structural unit" designates a divisible (divisible) structural character. The simplest divisible unit is designated as a "structural unit." A term is called a "structural unit" if it can be composed of distinguishable parts and does not reach the stage of an individually functioning organism. More highly developed than the structural unit is the individual structure (structural unit) of an indivisible organic whole (e.g., in a dynamic organism).

2 Formula in nature: "A decomposed cabbage stalk and a piece of bone are as examples."

In our practical exercises I have often noted a structural unit that rose above this simplicity. I found no reason to find fault with a structural individual of this sort if it were accompanied by, or subordinated to, a higher development. Here as everywhere else, I said to myself that as an introduction to the study of anatomy we usually start out by investigating the structure of the matter from which plants and animals are constructed. In this study we make use of a knife. By structure the anatomist means the grouping of the smallest particles of matter that can be seen with the naked eye or the microscope.

Similar structural designs are provided by matter which is exposed to destruction by decomposition. In a bone we can sometimes make out the rhythm of the bone corpuscles even with the naked eye; it takes the shape of a mass of cellular, tubular, or canal-shaped hollow spaces.

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Davy's note, November 1806:

"Yes, I shall go on studying anatomy, but it is more a means than an end.

I intend to bind myself more and more, dissect the machine into its parts. I shall study anatomy along with the medical students. Then, in the presence of the living models, I shall make a new use of what I have learned about the mechanical functions of the body. I shall attend the evening life classes of the Museum (along with the medical students) and shall sketch the visible functions of the body in the Museum, since I have given up the schoolmasters.

I'll make myself even smaller than they are, that will surely leave me greater possibilities, and I still have a shred of academic pride in me. I should have to rebel against the corrections of those well-meaning colleagues.

But if I can't make them believe, let me say what I like. On November 3, I started the course in anatomy. A strenuous feat of the mind. Every morning I work from 8.30 to 10.30 in the dissecting room. The coldised body is a thoroughly appropriate subject. During the life classes I've inspected a lot from every angle. But now I no longer mean to project some sort of diagram of it. I shall proceed so that everything essential, even the essentials that are concealed by optical perspective, shines in my picture."

The grouping of the smallest particles of matter that can be distinguished with the naked eye or with the microscope [3].

In a similar way we distinguish the structure of cartilages, ligaments, tendons, muscles, etc. The structure of the ligaments is a bundle of wire-like fibres [1].

The fibres of the tendons extend to the muscles and in the muscles a second striped structure is added across the first [2]. So much for the material structure, for the rhythm of the matter of which organs and the organism are made.

Material structures in nature: structure of ligaments [1], muscles [2], bones [3].
Let us from now on consider the organism as a motor in which the striving for movement and its achievement are interlocked; and let us build up from the servant to the master. In the whole field of action let matter be our promise. It should be everywhere. Now if first of all we consider the relationship between the bones which make up the skeleton, we notice at once that even in a resting position they require support from one another. The ligaments take care of this.

The natural motor organism; the striving for movement, and its execution. Quantitative and qualitative representation.

The ligaments connect several bones. They serve the bones [1]. Their function is of a lower order, they support by connecting, they are subordinate. Their function has a structural character in relation to the movement which is the higher function of the bones (one may speak of the structure of a function). Thus in the diagram I am drawing [2], I give the ligament (B) little space, but give rather more to the bone (K).

And how is the muscle related to the bone? It can force it into a new position. Through its power of contraction, the muscle gives two bones a new angular relationship to one another (muscles have the ability to contract and thus shorten themselves).

Ligaments and tendons help by holding the bones fast [4, 3]. The steps of motor organisation lead from the bone to the muscle; the tendon mediates between them.
The angle between bone and muscle must change because the muscle wills it. The motor function of the muscle is thus of a higher order than the motor function of the bone. The passivity of the bone is dependent on the activity of the muscle (the bone function is passive in relation to the muscle function). The bone function is "structural" in relation to the muscle function. It helps the muscle to carry out an order that has been received from somewhere. Thus in my diagram of the action of movement [1] I give the muscle the larger area and put the tendons between muscle and bone.

The muscles act independently of one another. Every muscle has a special task, one bends the organ, another stretches it, etc. Here again we note a higher functioning than in the bone, which can do nothing by itself but only in coordination with another bone. But we have spoken of an "order" or command. The muscle is sufficiency only up to a certain point. It obeys when the command reaches it; it doesn't will to act but must act; at the very most, it has the will to obey. It obeys the brain's telegraphic command, which is communicated through the nervous system.

This means extending our diagram [2].

What do we learn from Figure 27? First of all we learn the relativity of serving and commanding, of structural and individual functioning. The whole is like a nest of boxes (box within box within box).

The functions are evaluated according to spatial or quantitative criteria: The more important a function is, the more space it needs. The direction is eccentric [3]: the value, the importance, increases as we move from the centre to the periphery [2].

Progression of the function values according to importance. Qualitative representation, with increase in value towards the centre (concentric representation).

The ideal view, on the other hand, starts with the brain; it attributes central importance and quality to the organ, which sends out rays of command on all sides. This view leads to a concentric or qualitative representation [4].

The brain subjects the muscle to its will by means of the nerves; the muscle's command, sent through the tendons, gets to the bone, until the whole bundle of matter, despite its attachment to the earth, is set in motion.
Exercise for 20 February 1922

Weight scale:

Problem: Organism in three parts:

I. Organ active (brain)
II. Organ middle (muscle)
III. Organ passive (bone)

instead of weight scale:

I. 
II. 
III. 

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3. Movement is inherent in all change. The history of the work as genesis.
The function of the work of art. The nature of real forms of movement and the
organic connection between them

Monday, 27 February 1922

Appropriate choice, formation
and accentuation of organs

Our problem last time was: the three-part organism.

First organ, active character (brain).
Second organ, middle character (muscle).
Third organ, passive character (bone).

Brain, muscles and bones were not to be represented as such; rather, their position within
the animal motor organism that I had discussed was to be characterised by a swift stroke
or two.

The concepts active, middle, and passive can best be discussed in terms of linguistics:
When I say: I drive, that is the active form.
When I say: I am driven, that is the linguistic expression of the passive.
The middle form would be: I join, I integrate myself with, I make friends with.

Here it is worth recalling that the ancient languages formed the passive without an
auxiliary verb, merely by using a special ending. I can even remember the pure middle
form from the Greek, without any pronoun, expressed solely by the verb ending. The
modern languages no longer express all these modes with the pure verb form, but em-
ploy various circumlocutions.
As to the rank of these three voices, active, middle, and passive, it will depend on the
point of view. In an ideal order, the active would come first, because the impulse to
movement begins in the brain, home of the thought that is father to all more highly de-
volved action.
From a material point of view we should arrive at the opposite order and say that the solid matter of the bones takes the lead, because it first makes the movement concrete. But the two points of view need not be played off against each other. What is essential is the organic bond between the three parts as left, middle and right, or right, middle and left.

In view of the undeniable difficulty of the problem, I contented myself with solutions in which the organic context could clearly be seen, either in the shape of the organs themselves, or in the way these shapes were accentuated.

The appropriate choice, formation and accentuation of the organs, illustrated by the water mill.

A. Appropriate choice of the organs (42) p. 349.

1st organ: the water course
2nd organ: the connected wheels
3rd organ: the hammer

Active: the water course
Middle: the connected wheels
Passive: the hammer

B. Appropriate formation of the organs (41) p. 349. The main organ most individually structured, the others progressively less so.

1st organ: the water wheel (active)
2nd organ: the wheel works (middle)
3rd organ: the hammer (passive)

The buckets of the big wheel
The spokes of the little wheel

C. Appropriate accentuation of organs (41) p. 349.

1st organ: with main energy
2nd organ: with intermediate energy
3rd organ: with subsidiary energy

Active
Middle
Passive

Main organ: the water. Other organs: two wheels connected by a drive belt, one large, one small (1).

Criticism of Figure 1:

a) Formal mistake in the choice of the subsidiary organs. There is no organic three-part gradation relating them in the order of their importance to the principal organ.

b) Mistake in the form of the principal organ. At best its form is a conventional wave structure, 'the way you do water', not a striking representation of a principal organ.

c) Mistake of accent: the principal organ, the water, is not treated dynamically enough.

Correction to Figure 1:

A. The appropriate choice of organs (42).
At this point the incongruity of Figure 3 from the point of view of form and accent must be obvious. The least probable event occurs; namely, that the intermediate organ becomes the most prominent.

Instead of extending the faulty example (I) p.346 downwards by including the hammer in my choice of organs, I can extend it upwards. Then the hammer is omitted, the wheel becomes (III), the water becomes (II), and so for (I) I think up something new, which is all the easier as flowing water is hardly an original inspiration (I) p.346.

We are familiar with the force of gravity (towards the centre of the earth).

We are equally familiar with the horizontal mirror of "still" water (II).

without Mountains A and B to hold it in, the water would flow off on both sides (II).
But if we eliminate Mountain B and leave Mountain A in place, the water flows off only to the right [8]. Here two forces are at work: first gravity, second the obstructing mountain.

The diagonal in the parallelogram of forces will be the force of the flowing water, II [9].

But if we eliminate Mountain B and leave Mountain A in place, the water flows off only to the right [8]. Here two forces are at work: first gravity, second the obstructing mountain.

The diagonal in the parallelogram of forces will be the force of the flowing water, II [9].

With the accent misplaced this variation looks like this.
I. Let the active force be the soil in which the seed opens: The complex: soil, seed, nourishment, growth, roots, which produce the form [I].

II. Rising into the light and open air the breathing organs form: one or two tiny leaves, and then more leaves and more leaves.

III. Result, the flower. The plant is full grown.
Variant of the plant example: reproduction.
With the function of the flower begins the sexual episode which serves for reproduction.
Here our three-part schema takes the following form:

I. Active organ:
- stamens and pollen (male organs)

II. Middle organ:
- the insects as intermediaries

III. Passive organ:
- the fertilised seeds (female organs, fruit)

Representation of natural growth in longitudinal section and cross-section: A longitudinal section of growth does not give us a total picture of the expansion, but only of the action in a single direction. Synthesized, it leads to the total centre, while in cross-section growth leads to all sides, away from the centre. Figureation starting from the centre in progressions, i.e. movements in the smallest parts and in the whole (see p. 354).

Note: In Appendix.

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Material and ideal statics and static-dynamic synthesis
Analysis of M. H. T. Coaxial (p. 320).
(Cf. with ideal and ideal statics, pp. 182-184.)

In regard to material and ideal statics, Kene notes: "There is an organism the earth provides the basis for a static-dynamic synthesis. On the basis the earth has numerous actions at a cosmic-level static view of the world and as a terrestrial-cosmic view."

When material statics (terrestrial relationships) are combined with ideal statics (cosmic relationships), the tension between the centre of the earth and the horizon forms new relations.

In ideal statics height is unlimited, in material statics it is absolutely limited. In the universal field a combination of the two leads to two different horizons:

On combined basis, a composite form:
(a) Vertical section; (b) Front section presents horizontal classes of different heights.
(Cf. (5. 3. II) p. 182.)

From the standpoint of the aims, combination of this ideal and material view (Cf. p. 182) increases the possibility of transcending terrestrial (static) limitations.

(c) By changes in centres of gravity, etc.; and notices:
(d) By relation made to an irregular angle.
(e) By composite form (representative of the form as extraction or synthesis).

Where one is free to choose, the step towards specific action is determined biologically. 'Pantemically' style is the human attitude with new, an influence of transcendental problems. Between the static-classic and the dynamic-emotive there lies an intermediate motif, where static becomes for the freedom of dynamics.
We have before us, therefore, two opposing principles of movement. We might call them masculine and feminine.

In questions of movement we thus distinguish two series. There is an absolute means of representing directed movement; with the help of major-minor; and a relative means based on the sex, or gender, of the movement. If you judge not from part to part but as a whole, the question of movement and the inclination to choose a definite movement appear in another light. Then the form stands before our eyes as an undivided whole and takes on an aggressive tendency: sharp and cutting.

Volumes growing on all sides: feminine.

Lengthwise growth in partial cross-section of heart (1).

Longitudinal section (2).

Aggressively advancing but regressive lines: masculine.

One-sided progressive increase, growing in longitudinal section (3).

A Cycle: Third Example

Our anatomical studies might also be extended from the realm of voluntary movement to that of involuntary movement. Voluntary movement, as the name indicates, occurs at the command and according to the need of the authority that we call the brain. It seldom extends to the whole motor apparatus but only activates certain couplings (in a part of it). This part of the animal motor machine is subject to fatigue; here fatigue, slackness, and temporary discontinuity (in sleep) are the norm.

"Longitudinal sections are typically static and cross-sections typically dynamic phenomena." Cf. growth in partial cross-section and longitudinal section on p.23. (Draft on 1982 Dec 2, edited November 1985.)

1843 On 6: "Tissue of the brain.

On and out of danger. 

1°. Coupling: combination, things that work together. Meeting of the elements: 1° evilness extends to the whole motor apparatus, but only brings alive certain relationships in a part of it.

Volume caught in the work

The involuntary movements of the other part of the machine: the heart, the lungs, the alimentary tract—these involuntary movements are continuous as long as we live. Here one does not reckon on fatigue, slackness, or temporary stoppage.

I. The heart pumps (active).

II. The blood flows through the arteries, is moved (passive).

III. The lungs purify, they participate by purifying (middle).

III. The blood flows passively back towards the heart.

I. The heart pumps again (active).

II. The blood is again set in motion and returns to the part of the heart where the cycle started (passive).

I. Heart

II. Lungs

III. Blood of the arteries and veins

So much as a supplement to our last exercise. You have probably noticed the schematic succinctness of my representation, which on the one hand makes for clarity and simplicity, and on the other hand leaves you free to treat the formal concepts and formal relationships we have been discussing in the most diverse ways.

But to figure the formal relations (even further narrowed in our exercises) which constitute movement (in our case only movement which is induced, translated, and forced), and to bring these relations back to nature through abstract analysis, for all this we need more than a clearly thought out diagram.

In the first place, what do we mean by movement in the work? As a rule our works don’t move. After all, we are not a robot factory.

No, in themselves our works, or most of them, stay quietly in place, and yet they are in movement. Movement is inherent in all becoming, and before the work is, it must become, just as the world became before it was, after the words, ‘in the beginning God created’, and must go on becoming before it is (will be) in the future.

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Both processes, building and cutting down, take place in time. The work as human action (genesis) is movement both in a productive and a receptive sense.

This is the initial productive movement, the creator's first action. Even this first move is temporal, whether it remains flat or leads to space; it takes time. Shortly after the first productive movement the first countermovement sets in, a receptive movement. In plain English: the creator looks to see what he has achieved so far (and, says the Bible, it was good).

Another occurrence in time. Only the smallest of all things, the intrinsically dead point is timeless. When it becomes movement and line, that takes time. Or when the line shifts to form a plane, or when planes move to produce volumes. From the cosmic point of view, movement is the primary datum, an infinite power that needs no extra push. In the terrestrial sphere matter obstructs this basic movement; that is why we find things in a state of rest. It is a delusion to take this earthbound state as the norm.

The history of the work, which is chiefly genesis, may be briefly characterised as a secret spark from somewhere, which kindles the spirit of man with its glow and moves his hand, the spark moves through his hand, and the movement is translated into matter. The work as human action (genesis) is movement both in the productive and the receptive sense.

Productive movement depends on the creator's mental limitations (he has only two hands).

The step from individual articulation or structure to workmanship or craft: we may speak of craft when a unit of individual structure coincides with the action of the hand that makes it, e.g. stone to stone.

material craft
The receptive process. The 'receiver', or viewer, who may be the creator himself, moves as it were in the opposite direction. But he too moves wholly in time. First physically: even on the simplest surface the eye does not in any one moment perceive everything with equal intensity. Of this it is physically incapable, because the retina does not register the whole image with maximum sharpness, but only Part I which is in the neighbourhood of the point that lies on the straight line through the focus of the lens and the retina's centre of sensitivity. If the eye wishes to see Part II of the object sharply, it must turn upward; if it wishes to obtain a clear image of Part III, it must turn downward. The eye muscles turn the eye in this direction and that, from left to right, from angle to angle, round in a circle, and the successively registered parts are gradually integrated in the brain. The brain has the ability to store up images and to make a whole of them; the eye has the ability to return time and again to a spot for verification and confirmation. We know of course that the image is actually reversed in the eye, but this makes no essential difference in the process.

1st Stage: The viewer takes in the middle zone, Part I. Parts II and III produce a blurred impression on the retina. The muscles for lifting and lowering the eye remain passive, they play no part.

2nd Stage: The eye obeys the viewer's desire to obtain a sharp image of the upper region. The lower muscle becomes active, contracts until the eye is brought into a new position where the sharp zone of the retina, the focus of the lens, and Zone II of the object are in a straight line. Zone I is still perceived, but less sharply, whereas III, which was previously blurred passes out of the field of vision.

3rd Stage: Now the viewer wishes to obtain a sharp image of the lower zone. The muscle for lowering the eye contracts and the eye follows until the retina's zone of clear vision, the focus of the lens, and Part III of the object are in a straight line. Part I remains visible (though not sharply), while II passes out of the field of vision. Thus the eye, like a grazing animal, feeds out the terrain not only from top to bottom but also from left to right and in all directions for which it feels the need. It travels the paths laid down for it in the work, which itself came into being through movement and became fixed movement.
It travels these paths in different ways, according to the organization of the work. If the work is built solidly and clearly, with successive development of values, the eye moves, grasping from the values that attract it to other values that attract it after the first values have been “grazed over” [1].

If the work is formed firm and clear, yet governed by strong value contrasts, the eye moves more in loops, in the manner of an animal hunting [2]. Or more rhythmically [4]. But if the formal values of the work are not firm and clear, but fluid, if they themselves are movement and flow, the eye drifts casually about in the current like a boat, or it sails as a light cloud does in a gentle breeze or a storm [3].

Works with mobile forms involve greater activity.

In composition main accents may be so chosen that a current is made, it catches the eye, which can rest on it. But there is also the possibility of attracting the eye in an obvious way, without finding a rest point. In this case we should set the eye more truly in physical terms we should speak of a “river” (not the physical contact is imaginary). Here again we have lateralization. The force of attraction can be preserved by the accentuation of accents. Where you bring different tones together, the question of proportion comes up, the relation between things and their position. Proportion is not only a question of actual measurements, but also of the forces at work in the measurements. It can be described to produce local density, simplicity, or complexity. In a composition, one and one, line and line, or plane and plane is not always clear. There can be a dual procedure in which plane and line operate independently to produce an organic counterpoint.

From the point of view of the method, the landscape does not cease there (as before), because we are moving. It must at least take on a countermovement. What is done here is landscape which moves. The mobile forces create a sort of sea, which is a sea of water, of what is to be seen at the landscape. There is the mobile attitude which we can take towards the landscape. What is close to us passes quickly, what is far away grows along with the movement within our sphere of vision.

The activity of works with mobile forms [1, 3, 4].

100028: Mountain surge. Caillebotte.
Now let us apply what we have learnt to a few examples.

**First example:**

**Formal statement:**

Overall design: firm
Plan: vertical
Articulation: firm
Development: progressive increase
Direction of increase: from top to bottom

**Ideal statement:**

The idea of the weight of matter.

**Receptively modified function:**

The eye of the viewer seize at once on the juiciest spot in pasture No. 1, compares it with No. 2, which it compares with No. 3 etc. Base below [1, 2].

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**Second example:**

**Formal statement:**

Overall design: firm
Functions: design vertical
Structure: firm
Development: progressive increase
Direction of increase: from bottom to top

**Ideal statement:**

Overcoming material gravity.

**Receptively modified function:**

The viewer's eye heads for the part of the pasture where the grass grow thicker, No. 1, compares No. 2, and then No. 3, No. 4, and No. 5. Base on top [3, 4].
Third example:

Overall design: firm
Plan: vertical
Articulation: firm
Function of forms

Development: progressive increase and progressive decrease
Direction of increase: downwards to the middle upwards to the middle from the middle upwards from the middle downwards
Direction of decrease:

Ideal statement:
Combination of the material and the idealtic interpretation
Receptively modified function:
The viewer's eye is attracted mainly by values 1 and 2, vacillates between 1 and 2, compares 3 and 5 with 1 and 2, and finally compares 4 as well. Base in middle [1, 2].

Fourth example:

Overall design: firm
Plan: diagonal
Articulation: firm
Function of forms

Development: increase and decrease
Direction of increase: from outside to inside
Direction of decrease:

Ideal statement:
Overcoming of gravitation. It is replaced by centrifugal force (C/2 [2] p. 376).

Receptively modified function:
The viewer's eye is most strongly attracted by the main weight 1, because this main weight also occupies the central position; then it shifts round in a circle among the four 2's and in a new circle among the four 3's [3, 4].
This teaches us that the movement of a picture need not be stressed as much. For as you have seen, even the most static, rigid work has movement. Nevertheless, the question as to the nature of real forms of movement, of really moving form, is very much alive. It can lead us into new and richer realms of form.

Monday, 13 March 1922

I. Pasture of a grazing animal, functions of this part [1, 2]

II. Hunting ground of a beast of prey, functions of this part [3, 4]

I. Possible combinations of I and II; one character is subordinate to the other or the two are given equal weight

Figures 1 and 2: The foundation of the movement is relatively static (cf. pp. 380-390).

Figures 2 and 3: Radiating from a centre, the movement is, in various extents, given dynamic emphasis (cf. [2] with p. 377).

From the inside out

From the outside in

Linear diagram from 1922.11: The Wells, Colour.

By contrast, the figure in movement deriving from moderate tension, in the Mars. As a variable on the figure, the same formal development in inner image dressing, in transparent peccary, forms the figure 1922.11: Forceful issues. Cf. "the combination of the material and flesh forms", p. 396. Carnets and the ant excitement, p. 416.
4. Succession, or the temporal function of a picture
Movement as action and form

The real forms of movement

Monday, 20 March 1922

By the function of a picture we mean the way in which the movement of the picture's general gets to the eye, and the way in which the movement inherent in the picture communicates with the eye and with the mind behind it. This brings up the old story of 'effect', but in view of our emphasis on the character of movement in each particular picture, we shall be speaking not of effect in general and as such, but of the specific effect of each particular picture. To distinguish and classify these varieties of effect amounts to a classification of the pictures themselves.

As we saw at our last meeting, every work, even the most detached, moves in time, not only as it comes into being (productively), but also as it is apprehended (receptively). Our eye is so constructed that it must take time to explore what it perceives. Weary of the familiar nature and culture surrounding it, the eye seeks out new charms. If it looks for them in a picture, it is first attracted to the region marked by the most intense development of pictorial energy.

An attraction of this sort is always relative. If we have a white surface (my sheet of paper on the blackboard) that has aroused the curiosity of the eye, a deep black on it will have intense energy compared with the white. Or suppose a green surface has lured us to examine it more closely. Here a strongly contrasting red would be the special energy. And similarly with white on black, warm on cool, lively on tranquil, or the other way round, higher on lower, stronger on weaker, harder on softer. Or active on static, not to mention all the other contrasts which can captivate the eye in a picture.

I have a feeling (which the results of our last exercise seem to substantiate) that I haven't made myself quite clear enough. Let us start by going back a little.
I should like to show you once again how both product and recept1 move in time. As my product I choose a very simple figure. But rudimentarily as it is, it cannot come into being all at once even if I work with both hands.

white

white

third
(light grey)

white

second
(dark grey)

third
(light grey)

Product Figure 1
This figure [1] consists of the factors 'first', 'second', and 'third'. As we see, this product did not come into being all at once, since it took time. And, notwithstanding its extreme compactness, it cannot be perceived all at the same instant.

No: the stimulated eye leaps 'first of all' to the strongest energy,

with which it compares the 'second',

and with it in turn the 'third'.

This once again means succession, a movement in time.

[2, 3, 4] Receptive process in connection with Figure 1

This receptive process, or 'recept' for short, represents the function of the product in Figure 1. Now we have before us: [1] the product, a planar form, and the 'recept' [2, 3, 4], a linear form. In one case active planes, in the other, active lines that are functionally connected.
In the one case active planes, in the other active lines, which are not (it goes without saying) dependent on each other in the same way (described above) as the passive lines are dependent on this active plane: or as here where the plane is the result of lines, hence passive:

Recepts A, B and C correspond to the product in Figure 3, p. 271.

Looking more closely at the recept we see a movement getting smaller as it moves away from the energy base, or the successive devaluation of the principal values. These red forms diminishing in energy are the expression of the three values of our product (Fig. 90). At the same time the new form is a picture in itself, and as a matter of fact it is a picture whose form is one of pure movement. We shall make this last insight still clearer with the help of a new product.
The new product consists of nine graduated values, which for the sake of simplicity I have distinguished only quantitatively [1]. A gradation of tone or colour value would of course bring out both expression and function still more vividly.

In view of the centric character of this product, I find that in drawing the recept I shall have to schematise the gradation of values as nine concentric circles [2].

The diagonals should also be considered. The stage is set for the receptive action.
Before taking up the product, let us consider the following little prologue. We have been moving about in nature for some time and are tired of its out-of-doors impressions. It seems a blessing to enter a dark house. The room in which we find ourselves is pitch dark, empty and black. The nest room we enter is also black except for a painted wall. Here our eyes, intensely stimulated, leap at the pure white spot I have marked ‘first’. Then at the still very bright ‘second’ and then on to the other, increasingly dark values [1].

In this way the eye's path runs in a spiral round the central white through the various stimulus points [2]. The stimulus points move farther and farther away from the centre but preserve their relation to it.

The product [1] p.375 consisted of solemnly rigid and static forms; its recept [2], the function of this rigid figure, is the purest conceivable form of movement, a spiral. And in every further attempt to represent the functions of a picture we shall always acquire forms of movement; the closer we come to the essence of the function, the purer will be the forms of movement.
"Discontinuous arrangement of values, physically loose-end. No middle-contact between the unitized and fragmentary, and the clear relation that brings things together (normal reconstruction necessary). "Discontinuous" divides the picture in a discontinuous or negative sense, the product must be divided. The part is something divided from the rest. The past (quotidian) can stand by itself or be recomposed into a whole that develops from the product. Possibility of impressive dissonance: The normal tension of values in our concept of for is brought into agreement with the inner statement, the discontinuously moving inner tension.

Examples:
1986: R V I. Judicial. O.T.
Colour reproduction in Grottaexec, p.238.

In comparison with those preceding, this new product shows a more irregular arrangement of values [1]. The previous pastoral of the grazing cow has turned into the hunting ground of a beast of prey, as will be clearly shown by the corresponding function picture.

Receptive preparation: For my first diagram of this function I choose a rather epic system to be read from left to right. On it I note the values, not in the order of rank, but, in accordance with the irregular displacements of the product, from bottom to top in the following order: third, fourth, eighth, ninth, first, fifth, seventh, sixth, second. The special position of first at middle height should be kept in mind. The sequence and order of rank are not identical (Recept, Diagram I, p.381).
Receptive action. In both diagrams I put my notations in the position corresponding to the situation of the values in the product, and by connecting them in the order of their rank obtain two different recepts which intrinsically of course are almost exactly alike.
Now that we have come to the noble form, let us first make a slight distinction. The movement by which a formal element develops into a new formal element does not necessarily produce a dynamic form. The movement of a point into a mathematical straight line — — — is indeed an act of movement but not a dynamic form. The same line, when it shifts to form a plane, is not a dynamic line, because it is then no longer any line at all, but a plane.
Nor does the plane produced by the line's act of movement necessarily show dynamic character. A visible dynamics is created only by successive growth or diminution in respect of the quantity or quality of the energy employed. You remember the part played by the scales when we were still rigid and static, weighing the values on this side and that side against each other. But of what use are the scales when we want to measure moving values? How are we going to weigh things that won't stand still? Perhaps some comfort will be found in the following conception:

![Symbols of the figuration of movement](image)

The top. A visible dynamics is created by successive increase or decrease in the quantity or quality of the energy employed. No matter how accurately the weights are divided, the standing scale supported by the earth at one point will only totter and fall [2].

Set spiraling about itself, it will be saved from falling. Then it is called a top.

Every child knows that a top does not fall as long as it remains in motion, as long as it spins [3, 4, 5]. We can derive equal comfort from a rolling wheel, a child's hoop, or even a diabolo, the double top on a loose cord [6], which knows how to walk tightrope without falling.

But there are other paths from plane to volume by rotation round a common vertical axis. Result: sphere, cylinder, and cone, and perhaps a double cone.

Comforted in principle by such thoughts, let us look further for a substitute for the 'obsolete' pair of scales.
The pendulum. A very interesting little instrument is the pendulum consisting of a little lead weight and a hair which swings back and forth from a fixed point: p is the centre of a circle, the hair acting as a radius.

The plumb-line by swinging back and forth becomes a pendulum.

Movement and corresponding countermovement lead to balance.

"The miraculous pendulum." The pendulum is an expression of temporal unity, a compromise between movement and countermovement, the symbol of mediation between gravity and momentum. "Drawing of double parallelism between static rest and rightward pendular movement." Balanced movement in a 48-part circle.

In between, between statics and dynamics, lies an intermediate realm, whose symbol, the pendulum, represents a compromise between the two realms. One may say that, when a pendulum begins to swing, the force of gravity is suspended, replaced by momentum. When the movement and countermovement proceed from a fixed point, the balance between them leads to the form of the pendulum's movement.

Between gravity and momentum.

Gravity and momentum are closely related.

Essential here is the concept 'back and forth', i.e. the pendulum's characteristic ability to register the compensating interaction of movement and countermovement.

In the swing of the pendulum new forces appear, which under certain circumstances shelter the domination of gravity. Then statics is suspended and dynamics takes its place.
Through the combination and intensification of movement and countermovement the tension of movement and countermovement begins a process of tension in the opposite direction (cf. 'Arabesque': p. 285).

The synthesis of opposition and balanced movement points to the intermediate realm between statics and dynamics.

Analyses of the dynamic function in 1821/19:
Oscillation balance, p. 286.

The main tension is in two directions, upward and downward: gravitation and countermovement, momentum (1) (cf. 'Formal and Ideal Movement', p. 286).

Measured by the mass of an equal movement on all sides of a space (within the limits of 2).

Energy moves in different directions from the ideal center; an imbalance of force results in an ideal-dynamic shift, balance is expressed, mobile states of motion that demand expression (3).

If the force is applied to the side of the union of forces, the balancing action is convoluted in the form of a pendulum or a spring, or the ground-plane is moving (cf. 'Dynamics', p. 299).

Starting from systematized balance as the norm, we have symmetrical oscillation, which is either purely static (statics) or purely dynamic (dynamics). Oscillation should be taken as the center of gravity and momentum (along the upward or downward path followed by the eye). The deviations from pure statics point to the realm of 'pictorial mechanics': that is, 'to form of movements in the intermediate realm between statics and dynamics', gravitation and momentum add up to 'natural tension'.

'Oscillation and momentum', p. 286.
And the pictorial schematic on the first and second laws of statics: building-up and falling-down, p. 286.
We can go still further, from the loose manual stroke to the perceptible displacement of the central point p, and the pendulum writing becomes a transcribed expression of each displaced form (o → p₁ → p₂ → p₃).

Here for example the pendulum writing is a dynamic expression of vertical straight lines and we arrive at a dynamic variant of the static figure [2]. We can also draw the straight form so that it seems to follow a winding path or any other form we please [3]. Or at any given moment we can relax the drawing completely by dropping the form. The pendulum becomes a gentle sling, writes like this, and like the countermovement of the fixed pendulum the countermovement of the sling is easy to feel and complete. The implications of the shifting centre are carried over to the extended forms of movement.
Temporal and spatial movement combined. Dynamic shift of a static premise. Irregular lines in circle with constructive nodal points as jumping-off points (freely chosen movement). Twelve-part circle with six parallels in six directions.

Notation by Klee on 'spatial mechanics'.

'Specifically in mechanics, statics is the theory of balance. Dynamics is the study of motion. Kinematics is the theory of movement. Dynamic processes are relevant to sets in so far as they intermingle with one another in other words when they partake of statics.'

(C.I. static=sandy tention and position of balance, pp. 176-177).

Static-dynamic tension. The pendulum is a symbol of mediation between statics and dynamics, between gravity and momentum, between rest and movement. If the motor force weakens, gravitation reclaim its right. The pendulum also expresses a unit of time.
Gravity and momentum

Static domination, hampered energy, gravity

Dynamic, free spontaneous energy, momentum

by standing

Spontaneous energy

or hanging

Momentum

Hanging is a variant of standing, because the hanging point must be solidly supported

The hanging pendulum is inclined to wander into the dynamic realm and swing back and forth.

Anything on earth that shows dynamic will seek to overcome its gravity by momentum; but whatever is purely dynamic or transcendent, has normal power of movement; it is mobile and without heaviness. Its freedom of movement is not obstructed by any attraction as on earth.
The circle. But something new happens when, as the pendulum swings quietly back and forth, we suddenly think away the force of gravity [1]. Or if we swing the pendulum with so much force that gravitation is overcome, in either case the bond with the earth is broken and the cosmic form of motion sets in forthwith: the pendulum begins to swing round in a circle, which is the purest of dynamic forms [2].

Circular movement of pendulum [3].

In this closed, endless movement, the need for counter-movement disappears, and actually the pendulum abandons it under the new conditions. The purest form of movement, the cosmic form, arises through the elimination of gravity, of our bond with the earth. The circular form remains the same whether the movement is to the right or to the left. In the circle the dominant power is in the centre. The circle results from the primum orbis dynamica of a point connected with a dominant centre (by the power of constraint) [4]. All positions are possible; that is the symbol of dynamics.

Yet the force of gravity is still at work. There is no perpetuum mobile. If we confine the arc of the pendulum to a special case—the arc of a circle—the plumb-line on the horizontal is still a fundamental symbol. A kind of compromise occurs. More and more, the line loses importance [5].

When the movement is jerky, tension makes the steady state mobile, and things that are already mobile are disturbed by its constraint. As a result we get irregular curves and spirals.
The spiral. Thus we have made the acquaintance of a new force, which I call centripetal as opposed to the force of gravitation. The pendulum swinging in a circle can describe new shapes if the central point is set in motion or if the movement begins with the radius, which either lengthens, producing larger and larger circles, or shortens, making the circles smaller and smaller, until our little drama suddenly jerks to a stop in the point [3].

Variable radius length combined with peripheral movement transforms the circle into a spiral. Lengthening of the radius produces the living spiral; decrease of the radius makes the circuit smaller and smaller [1, 2].

This last figure tells the story of the spiral. Its movement is no longer endless and self-contained; the problem of direction comes up again. We have to know the direction, because the lengthening or shortening [2] of the radius raises a question that is vital from the standpoint of physics. The question is: Are I being released from the centre in a movement that is becoming more and more free? Or: Are my movements more and more bound to the centre, which in the end will swallow me up entirely?

It is the direction that decides whether we are being released from the centre in a movement that is ever freer or whether we are becoming more and more attached to a centre that will ultimately destroy us [3].
Either: movement of the radius away from C
Or: movement of the radius towards C. C — Centre

1. Radius movement (progression) from the inside out. Constructive picture (1 2 4 8 16 32 64 per revolution).
2. Twelve-part circle with arithmetic progression for twelve-fold increase or decrease of radius.
3. Spiral, Development during a single rotation.

The question means nothing less than life or death. Movement of the radius in relation to the centre: progressive, 'towards life', regressive, 'towards death'. And the decision rests with the little arrow.
We'll speak of the arrow next time, when we shall also take a look at my fine collection of arrows.

1. Crossed out: 'freedom' (or death).

Exercise in movement: 'the fountain', not the appearance of the fountain, but its nature. The hydraulic force considered as design but above all as dynamic function. Sketch of solution:

Abhellen Ablichak = Isi
Welsch zum Anfert = stream from upward
Abhellen etwa = three
AbILLISECONDS = downward flow
Ideas: sketch for solution of problem

(1) Coming from Abhellen
"If I broaden my concepts, I create a higher universal whole. I give my picture new, wider levels."

The water cycle

1. Evaporation of water from the ocean
2. Condensation of water vapor into clouds
3. Precipitation of water as rain or snow
4. Runoff of water into rivers and streams
5. Infiltration of water into the soil
6. Transpiration of water by plants

"Our epic has neither beginning nor end. This can be remedied by inventing a continuous but essential beginning and end of a finite temporal process is to create a cycle. The water comes from the sky in the form of rain, and rises up to the sky in the form of vapor. Thus I give my curve upwards and complete the circle in the clouds.

The arrow

In regard to duration and direction of energy the arrow is a precise projectile. The very simplest weapon developed from the need to extend our limited human reach: e.g. the spear, which allows the arrow to strike multiple targets. If not efficiently designed, contact between object and target will be lost.

A weapon of this sort with a longer range is the stone we throw. It strikes its target; it requires striking contact, it reaches the distant object through the air. In order to reach the object with some effect, it must, during its brief journey, preserve its force and direction, direction as far as the target, and force even beyond.

It was not so much the inaccuracy of this weapon as the effort the thrower had to make, that led to the development of better projectiles. Beyond all doubt the invention of the stud shot provided such an improvement. I remember how as a boy we cut hazel switches and picked up "projectiles" in a nearby potato field. We spitted the potato-projectiles on the switches; then we set the apparatus in centrifugal motion, increasing it till the very moment that the projectile flew off the switch.
The effect was amazing. We no longer had to swing our whole arm as in throwing stones; the switch relieved us of most of the effort; all that was needed was an energetic snap of the wrist, extending to the forearm for barely a moment at the end.

In regard to the saving of energy, we had made great progress: the potato flew over several houses, and landed ten, or even twenty, times further away than we could throw a stone. And we weren't the least bit tired afterwards. But the accuracy was very questionable, and in secret we admired the accomplishment of David the shepherd boy, who had hit Goliath in the middle of his forehead which could not have been very big. We needed more accuracy, and we were also able to obtain it.

This time we cut forked branches in the woods and fastened rubber bands to the ends, which could be pulled far back. When released, they gave the projectile considerable force and the direction could be regulated. We further improved our accuracy by exchanging the stone for a kind of arrow that we made out of a hairpin.

A little tassel of coloured wool served as a rudder, a handle, and also as an ornament. Related to this device was the bow and arrow, which of course we also learned to use.

Economy of energy and improvement of aim had been achieved. Both considerations had exerted a determining influence not only on our little contrivance but also on the shaping of the projectile which, because of its length, created little friction, while its straightness made it easier to aim. The arrow had been born: the arrow consisting of shaft, tip, and rudder.

The arrow consists of shaft, tip, and rudder.

The bow with the further refinements of an aiming device, a contrivance to pull the string, and a trigger to release it, is called a crossbow. The body is relieved of effort, one can concentrate on aiming. William Tell's shooting of the apple is of interest only because of the emotional complications. If he had not been so upset, there would have been no difficulty in hitting the target with so perfect an instrument.

Our modern firearms reach far back to the blowpipe, which is known to every boy. But an important innovation is made in the arrow, which we still etymologically call a ball or bullet: its two-dimensional movement.
The lines in the rifle barrel give the projectile a rotary motion. One might call this modern projectile a screw arrow or a drill arrow, because the two-dimensional forward movement reminds one of a screw or a drill.

(Note: the motion of big steamships and torpedoes is based on the same principle.)

The father of every projectile, whether fired or thrown, hence also of the arrow, was this thought: how shall I increase my range in that direction? Across that river, this lake, this mountain?

Common to the arrow and all its offspring are: the linear motion and the length of the trajectory in relation to the size of the projectile. The father is all spirit, all idea, all thought. Its motion can be mathematically straight, unaffected by obstacles, without friction because it has no body; it can be as long as it pleases, finite or infinite. Man's ability to measure the spiritual, ethereal and cosmic, set against his physical helplessness; this is his fundamental tragedy. The tragedy of spirituality. The consequence of this simultaneous helplessness of the body and mobility of the spirit is the dichotomy of human existence.

Man is half a prisoner, half borne on wings. Each of the two halves perceives the tragedy of its helpfulness by awareness of its counterpart.

The idea as intermediary between earth and cosmos:

The longer the journey from here to there the keener the tragedy. But it begins in the very fact of the steering point, in the need for release from bondage, in the need for becoming mobile if one is not just to be and remain so. Thus there is tragedy in the very beginning. And correspondingly in the continuation of the process: how can the arrow overcome the obstacle of friction? Will the movement persist (certainly not indefinitely, but at least that fast), a little faster than possible, than usual?

In parentheses: And so ye arrows, let yourselves be winged, lest you tire too soon; let yourselves be shaped so that you strike home, even if you do weary and do not strike home!
A genuine African arrow of this sort consists of shaft, tip and rudder.

The tip should not only cut sharply through the air, but should penetrate the target as deeply as possible, and cling with the help of a barb.

The rudder or vanes of such an arrow should add to its steadiness of direction, help it to keep its path.

Our symbolic arrow differs somewhat from the African arrow. The shaft is replaced by the concept of 'trajectory' and the tip by the concept of the 'tip rudder'. Thus the tall rudder of the African arrow is no longer needed.

The symbolic arrow is trajectory

Tip and rudder combined into tip rudder (aiming power)

And so our arrow looks like this:

The two lines forming the tip are equal in length and form the same angle with the horizontal shaft; this results in a horizontal trajectory.

Provided that \( a = b \) and angle \( \alpha = \angle \beta \), the result will be the horizontal trajectory C.
The parallelogram of forces. Unequal length and angles of the tip lines result in a trajectory deflected upwards or downwards.

\[ a \times b = a \times b \]
results in rising trajectory

\[ b \times a = b \times a \]
results in falling trajectory

The underlying principle is the parallelogram of forces, which is excellently illustrated in so far as it concerns direction. Two forces \( a \) and \( b \) working in different directions result in a new force \( c \) which proves to be a diagonal of the parallelogram formed by forces \( a \) and \( b \).

If the two sides, or vanes, of the tip rudder stand in the same relation to the horizontal, the trajectory remains horizontal. If their relation to the horizontal is dissimilar, the trajectory is deflected by the vane with the greater deviation from the horizontal.

In synthetic representation, this tip:

will result in this picture:

the bigger the ascending vane,
the more pronounced will be the rise

Or this tip:

will result in this picture:

the larger the descending vane,
the more pronounced will be the fall

The larger the ascending vane, the more sharply the trajectory will rise; the larger the descending vane, the more sharply it will fall. In earthly reality it is this latter which always occurs after a short while, for as the velocity is reduced by friction and interference, the attraction of the earth grows dominant and makes the descending vane more and more important (11) and (9) p. 413.).
Thus the terrestrial curve appears as finite movement [2, 3];

1
2
3
4

Thus the terrestrial curve appears as finite movement [2, 3];

In practice the end occurs at the surface of the earth, in theory at the centre of the earth [4].

One of the principal forces in nature is attraction. We call it gravitation. The notion of weight is connected with it. In our gravitational realm of experience, the earth (or, actually, its centre) always wins.

Falling is for us an empirical, terrestrial business. These processes take place directly on the earth. The falling body tends to continue towards the centre of the earth.

(Promptedly completed fall: a common occurrence on the crust of the earth.)

The straight trajectory (rise) undergoes a transforming influence. Here velocities play an essential role. Through this influence the straight line, temporarily at least, is transformed into a curve, deflected (attraction of the earth) [5]. In earthly reality it always begins to fall after a certain time. Then the trajectory runs straight again. When the descending plane becomes more and more predominant, the curve ends as a straight line (with the centre of the earth its goal) [4].
Static movements
1. Falling leads to the centre of the earth but stops on the first available horizontal shelf.
2. The displacements leading to balance building is the prevention of falling, either by raising or by a contrary movement of the main ledge. When constructed things fall, they end as horizontals, and the same is true of fallen men or beasts. The pair of scales is horizontal on a built-up point. Static bodies are of their nature constructed to cling to the earth. The animal as horizontal, man as upright construction. Contrastingly, dynamic bodies are constructed to hover and glide (their innermost essence, the bubble).

Pictorial schemata of the 1st, 2nd, and 3rd laws of statics (The possibility of compensation)

Concentric and eccentric forces. In contrast to this we have the cosmic curve moving away from the earth ad infinitum; i.e., becoming a circle or at least an ellipse [1]. At these heights developments are also conceivable, even if one knows nothing about the changing orbits of the stars. One can conceive of such a circling as the growing thread of a screw [2].

Which in flat projection becomes a spiral with positive movement [3].

But if we suppose conversely that a circling star comes too close to a larger star, so that its circles become increasingly smaller, we arrive symbolically at the death spiral, whose curve of movement becomes smaller and smaller, leading deceptively to nothing. What is deceptive about this picture is the terrifying rhythmic acceleration towards the end. The concentric wave of the arrow’s rudder becomes increasingly dominant as the catastrophe approaches [1] p.417.

The laws of statics translated into pictorial abstraction⁴ For examples see notes in appendix.

All straight lines that run vertically are schemata of the first law of statics (gravitation).

Straight lines that run horizontally are schemata of the second law of statics (horizontals, stratification as consequence of gravitation).

Possible compensation in the case of falling

Possible compensation in the case of building

The compensating diagonals are the third law of statics.

⁴ Two broken spirals based on a progression in the 26-part circle. The fragments first increase towards the centre, then decrease; they become level before dying.
Anyone who would like to experience this need only imagine that he is a round ball, in centrifugal motion round the inner wall of a funnel. The curves grow narrower and narrower, the rhythm faster and faster as he approaches the bottom of the funnel, the dead point. There is no escape unless a gate opens somewhere, unless a new repelling or attracting force makes itself felt as it does here:

The beginning of movement in Figure 3 is concentric towards the central. In the course of the movement an opposing eccentric force makes itself felt (driving away from the central).

Force and counterforce (of the centrifugal and eccentric) unite in a synthesis that determines direction.


where through the appearance of a new force the concentric rudder vane cedes its position of dominance to the eccentric vane (0, 3).

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With this phenomenon in mind, let us pass from the symbol to the composition shown in the diagram [1].

As you see, I distinguish between cause and effect. For the purpose of my diagram, the causes, treated analytically, are concentric forces A_1 and A_2, and eccentric force B; the effects, taken synthetically, are the negative spiral A and its emergency exit B. I assume that the arrow, considered in itself, is itself a synthesis of cause and effect. The two lateral vanes, or the two sides of the parallelogram of forces, may be taken as the causes of direction [2]. The diagonal may be considered as dependant on them, that is, as the direction resulting from them [3].

But we find a new relation between cause and effect as soon as we turn to the overall compositional synthesis of cause and effect. Then, seen from a broader point of view, the concentric forces A_1 and A_2, the forces that would like to lead the spiral movement of abstraction to the point C (center), may be regarded as the causes (hostile to movement), while, in relation to these causes, the trajectory of the deflected spiral arrow is only an effect (Effect A_1, Effect A_2, and Effect B).
One of the first exercises in movement I shall give you after Easter will be:

Determine the causes of this effect, and represent them in a free drawing:

Assuming that you have understood what I mean, I shall now pass from the schematic composition to the delineation of moving forces. How, for example, I ask myself, can one represent Cause A?

The creation of moving forces

In our diagram, Cause A had roughly this form:

It had the shape of a horn, broad as it emerged lower left, ending in a point z (centre) upper right.

Or if I unite the moving particles, this form:

The black arrow

The movement of tone value (from white to black). This means a development or increase of energy along a curve from lower left to upper right. In the present picture it means a development or increase of black energy starting from the underlying, 'given' white. A black action emanating from neutral white. If this order of energy is clear, the direction of the movement will be so compelling that the symbol of the arrow can be dropped. The given white is seen everywhere, one is accustomed to it; the eye takes little interest in it. But in response to the more particular contrast our perception increases in intensity as it moves towards point z. This extraordinary increase of energy or, receptively speaking, of energetic foci, is compelling in regard to direction. Or, to go beyond black and white:
Contrasts in colour temperature (cold and warm colours).
The hot arrow: heating. Given water; enter fire. Here is the scheme: [1]. Or in the realm of colour. The green-red arrow: Given green; enter red [2].

<table>
<thead>
<tr>
<th>Water</th>
<th>Damp</th>
<th>Snow</th>
<th>Ice</th>
<th>Snow</th>
<th>Fire</th>
<th>Ice</th>
<th>Damp</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>cold</td>
<td>cold</td>
<td>cold</td>
<td>cold</td>
<td>hot</td>
<td>hot</td>
<td>hot</td>
<td>hot</td>
<td>cold</td>
</tr>
</tbody>
</table>

Table of colour heating (from cold to warm, chiefly from blue to orange). A movement of this sort is called 'heating'. Here is our heating table in the form of an arrow, starting from the given 'cold' [3].

The cold arrow: cooling.
The opposite movement, starting with 'burning hot', is known as 'cooling' [4].

<table>
<thead>
<tr>
<th>Colour</th>
<th>Colour</th>
<th>Colour</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>red</td>
<td>red</td>
<td>red</td>
<td>red</td>
</tr>
<tr>
<td>orange</td>
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<tr>
<td>yellow</td>
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<td>green</td>
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<td>blue</td>
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<tr>
<td>violet</td>
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<td>violet</td>
<td>violet</td>
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<tr>
<td>grey</td>
<td>grey</td>
<td>grey</td>
<td>grey</td>
</tr>
</tbody>
</table>

Table of colour cooling (from warm to cold, chiefly from orange to blue). Given fire; enter water. At first it produces steam; then the water gets the better of the fire, until the partly burned house is entirely under water (the fire is out) [5].

The movements of colour tonality. Let us briefly touch on the movements of colour tonality: increase of red. Given: lack of red, i.e. very little red.

The red arrow

<table>
<thead>
<tr>
<th>Lack of red</th>
<th>To more red</th>
<th>To all red</th>
<th>Red summit</th>
</tr>
</thead>
<tbody>
<tr>
<td>red</td>
<td>red</td>
<td>red</td>
<td>red</td>
</tr>
</tbody>
</table>

Or the other way round, reduction of red, and all the other possibilities of crescendo or decrescendo. Long loops are the result of greater energy than half loops. Secondary contrasts, even directly contiguous, soften the expression of energy. This gives us an abundance of possibilities. We need only avail ourselves of them in accordance with our inner need, and the details of composed movement will lend themselves to figuration.

Synthesis of tonality-movement and temperature contrast. Tonality moves back and forth between the poles of white and black. The 'givern' white is the light as such. For the present all resistance is dead and the whole is without movement. We must introduce black and encourage it to fight; to attack the formless domination of the light. We are equally dismayed by the formless preponderance of a black surface, on which our source of light casts no waves, either big or little. In this case we ally ourselves with white and employ this kind of energy.

We must organize a war game, flowing visibly in both directions; we must make energetic use of both poles. Every vital expression in the realm of tonality is in some way connected with the two opposite poles, black and white. It is they that lend tension to the play of forces on the black-white scale.
The dimension of tone value: the concept of illumination is situated in the 'up-down' dimension: uppermost the light, the sun; right at the bottom, the concept night [1].

Without action

The dimension of temperature contrasts: the concept of temperature moves in the 'left-right' dimension [2].

The movement from light to dark gives an idea of the vest distance from one pole to the other, the distance from the very source of visibility to the last limit of the barely visible, the clash of the two extremes in open battle. Seen in partial actions: where the span is large, the full swing of the pendulum from black to white gives force to the action; where the span is smaller, the radius of the swing is less, the rift between the opposites is made less severe.

If a colour action is added to the light-dark dimension (up-down), the schema is broadened by the dimension of temperature contrasts (left-right). The two dimensions combined give two directions for movement and countermovement. As the combination of these two is increased and decreased we find, in addition, the dimension 'back-front'. It suggests a top made of a plumb-line and a disc. [4].

The temperature contrast would be easy to see if we really had a colour sphere in front of us and set it gently moving about its black-white axis [5]. The sphere fulfils itself at least as the shell, the outward surface of the synthesis of light and temperature.

The reciprocal movement of the arrows is a symbol for balance between movement and countermovement [6]. Spatial balance arises through the combination of balanced motion in depth and height. Spatial balance means: meaningful and forceful position in the whole realm of colour and tone values.

Visible movement is created by an increase or decrease in the quantity and quality of the energy employed. Through tension, the state of rest is changed to movement. Movement and countermovement give rise to dynamic balance or the purest of dynamic forms, the circle.

In the circular line a closed, endless movement is effected, there is no longer any need for countermovement.

Movement and countermovement combine into a centrifugal swing of the pendulum [7].

The belt with the colours of the spectrum is the equator so to speak [8]. The black and white points are the poles [7]. The grey point is equidistant from all five basic elements: white, blue, yellow, red, black.

The colours are on the left-right, back-front plane, purest at the edge of the circular line. The purest colour relations are found on the periphery. The last limit of total balance is grey, harmony without life.
The development of movement

The development of movement, that is, the composite (simultaneous) operation of organic parts in an independent whole, characterised by calm movement and mobile calm; a statically dynamic or dynamically static whole, which can be achieved only when movements are joined by countermovements or when we find a solution whose movement has no end.

Part of this text is in mirror writing. From right to left: hot from warm to medium to cold. He wrote with his right hand, but drew and painted with his left. He did mirror writing with his left hand. This is particularly evident in the titles or legends of his early etchings, which he inscribed on the copper plate in mirror writing.

\[\text{Hot to medium to cold to warm}
\]

\[\text{Hot from warm to medium to cold to warm}
\]

"Hand written: "Every higher organism depends on the synthesis of differences." cf. p.428.

Infinite movement
The colour circle

Our attention is called once more to the swing of the pendulum (p.386): dynamic compensation of errors or overshooting by errors and overshooting in the opposite direction. More about this static analogy may be found in the chapter on static balance (pp.309-211).

At last we approach the centrifugal swing of the pendulum (p.387), the infinite movement in which direction becomes irrelevant. First of all I omit the arrow. Thus I obtain a combination of heating and cooling. Pathos turns to ethos which, as you will see, unites and encompasses forces and counter-forces.

So we drop the arrow. The movement may be from left to right or from right to left.
A centre emerges, central grey.

As this becomes purer, so the grey becomes smaller and smaller. In theory it even shrinks to a point. For to the left of the grey point

green is still dominant and to the right of the point, red. Through purification of the grey the green-red and violet-yellow scales of movement are bent. But if I let the purity of the grey complete (unify) itself in the point, the two scales will inevitably be transformed into diagonals.

This brings us to the colour ethos, the colour circle. The flat toponography of the spectral colour circle (in segments).

The spectral colour circle is a rainbow, gathered in and crushed. The arrow is gone; we no longer say ‘that way’, but everywhere, which includes ‘over there’.

Every higher organism is a synthesis of differences.
1956-7-16. Shattered joy. Oil on canvas.

"A picture can often be compared to something. Then it becomes a symbol, and symbols by their very nature mean many things at once. Then perhaps one is reminded of something else. Something poetic, poetic I say, not literary, something that also seems to speak symbolically, as though a certain difference stopped it from putting things the way they are. To write poetry means to choose words and arrange them in such a way as to produce balance and impression. To this is added the freedom of creation. The connection is not clearly defined, but also has a symbolic character."
1. Not the work that is, but the work in process
The building up of multiplicities into a unity. The development of the whole Repetition

1st Exercise: Monday, 15 May, 1822

My last word: Every more highly developed organism is a synthesis of differences.
We arrived at this insight by the analytical method, that is, through critical examination of the differences (the parts) in themselves and in relation to each other and the whole. I tried to give the differences some sort of face, some sort of meaning that would be more than formal. Of course, our practical solution of the problems that came up had first to be formal, in accordance with our craft. But the underlying idea was expected to give a natural character to the component features, so that the composition could find its own nature. We were determined to avoid formalism, the new academy.

At the beginning of last semester I started with the simple, self-contained movement of the line:

\[ \text{[Diagram]} \]

then I showed by a few examples how this melody can be 'accompanied' or transposed so that it spreads out (filling or determining the surface). Then I attached the line to a number of points,

giving it this succinct, restricted character.
Then I took the step to the first basic formal difference by carrying the line back to its starting point:

free; ○ restricted; □ △

Here there can no longer be any question of elementary linear effect; the effect is planar. The free circular plane and the constrained square and triangular planes. But these are not elementary planes either. For you do not produce elementary planes by circumscribing a space with lines (i.e., point movement), but by the movement of lines.

Either:

shifted to produce this effect:

or twisted

to produce this effect:

Thus a figure of this sort:

from an elementary point of view is neither line nor plane, but some sort of middle thing between them. The production is linear, the movement of a point, but the result is the illusion of a plane.

Thus we may distinguish three characters: ¹

I. linear

II. middle

III. planar

I and III are elementary characters, II is an intermediate character, a hybrid. The characteristics meet only in the middle zone² (Fig. 1, p.436).
Six hours of the summer semester of 1902 were set aside for practical work. They were devoted to problems and ideas from the 'Contributions to a theory of pictorial form'.

5th exercise: Monday, June 26, 1902, pp. 475-489.
6th exercise: Monday, July 3, 1902, General review.

In certain of the exercises, the problem is to combine two or more pictorial elements into a synthesis. These problems are more than review exercises.

They are also devoted to the analysis of form, productive method, structure, and organization of parts into a higher pictorial whole. The account is on a broader outlook that will make for natural harmony in the work, an extent as compared to calculations and formulations, Klee's formulations of the problems are brief and elegant, in the field of pictorial work. "Please do not he who the diagram on module is inspired in form, but only in respect to meaning. Work naturally, free within, so that your measure will come forth." According to an arrow logic, not by calculation. In the general review line the sentence assumes central importance: 'But no work is just a result, but a work itself, last first and foremost general, work that is in progress.'
Basic relations in positive-negative-plane formations (and treatment of relief):
I. Exotopic accent
II. Change of border contrasts (middle zone)
III. Endotopic accent.

In spatial-plastic treatment (mutual penetration or inclusion) the accent is alternately endotopic and exotopic. Balance between active and passive, heavy and light. Further example: mutual penetration, three-dimensional intercourse, transparent and polyphonic overlap.
1942/43: Still life on 28th February.

Oil

"In conclusion, one more variant in which an accented line borrowed from some individual is individually divided and in which the structured plane and the structured plane (or tonalities) of every segment are so related that the two kinds of plane alternate both horizontally and vertically."

1943/44: After the act of silence.

Coloured paste on paper.
Positive-negative plane formation.
1st exercise:
Summary-up: Simple static low movement, line with rectified character. The basic formal differences: active, passive, middle. An underlying idea should give the component differences a natural character. Synthesis of differences into a higher organism.

The exercise calls for an attempt at coalescence with the three elements: free and plane fully (Fw), the middle piece framed (Fm), the inside, forma-volutes movement or color tondo.

Illustration:
1982(25:0) Kawaraka, p. A
1982(0:1) Toddir, p. 104
1952: E: At anchor. Oil

2nd exercise:
Figuration of dynamic forces. Development and increase of energy with movement in a single direction. Functional volume or increase of energies should be characterized first of all. Quadrants, extension, measure, form, volume. Natural movement or color tondo must be included. Rough edges layers in solid.

Meshes: lines, plane and weight: lines inside movement of color or tondo.

Primus, panamena, one of.

According to Bousson, ‘not according to seasons’.

Examples: measure and weight structures (Grotiana). Material structures in nature: lines, forms, masses. Plant: examples, the leaf and its function. Organic and spatial connections. What we want in the appropriate choice of organs in tropic spatial (measure) solid.

Tonicity movement: lighting, temperature contrast.

2nd Exercise: Monday, 22 May, 1922.

A movement in colour or tontality with definite direction, possibly with counter movements, with a view to balanced composition. Pathetic character, yearning in that direction perhaps the goal comes to meet you, or at least you take a few comforting looks back over the path taken.
3rd Exercise, 12 June, 1922.

Problem: the ethical character of movement

The development of movement, that is, the composite (simultaneous) operation of organic parts in an independent whole characterised by calm movement or mobile calm, can be achieved only when movements are balanced by countermovements, or when we find a solution whose movement continues indefinitely.

At last we approach the centrifugal swing of the pendulum, endless movement in which direction becomes irrelevant. First of all I omit the arrow. Thus I obtain a combination of heating and cooling. Paths turn to echoes which unite and encompass forces and counterforces. So we drop the arrow. The movement may be from left to right - or from right to left (spectral colour circle, Ed.).

Every higher organism is based on the synthesis of differences.

4th Exercise: Monday, 19 June, 1922

Problem: Static construction rigid (no figure of movement). Balance of organic parts evenly distributed.
<table>
<thead>
<tr>
<th>Kunde</th>
<th>Käufer</th>
<th>Gutachtet</th>
<th>unvollkommenheit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfaff</td>
<td>Kaufmann</td>
<td>gut</td>
<td>3.050 Mark</td>
</tr>
<tr>
<td></td>
<td>Kaufmann</td>
<td>gut</td>
<td>5.000 Mark</td>
</tr>
<tr>
<td></td>
<td>Kaufmann</td>
<td>gut</td>
<td>7.000 Mark</td>
</tr>
</tbody>
</table>

**Kauf von Waren:**

Kaufmann: Gut, aber der Preis ist zu hoch.
Käufer: Einigung auf 5.000 Mark.
Kaufmann: Gut, aber der Preis ist zu hoch.
Käufer: Einigung auf 7.000 Mark.

**Wert des Gutes:**

- Pfaff: 3.050 Mark
- Käufer: Unvollkommenheit

**Weitere Werte:**

- Kosten: 2.900 Mark
- Unvollkommenheit: 2.000 Mark
MASS and WEIGHT

Customer:
1) Give me a bushel of bide stuff.
The merchant measures it and says it costs 500 Marks.
2) Now, sundown, give me the same sized bushel of this other stuff.
The merchant weighs it and says it costs 250 Marks.
Customer: Why does this cost twice as much?

Merchant:
Because the other purchase is bide as heavy. (The customer agrees and pays 500)

Customer:
Now give me an equally heavy amount of this other bide.
The merchant weighs it and says it costs 400 Marks.
Customer: (Why is it half the price?)

Merchant:
Because this third collection is double the value, less light, greater better, is more sought after, nicer to look at.
(The customer is undecided.)

Falls into the sphere of LINE
Linear value: longer, shorter, closer and finer.

Falls into the sphere of FORM (tonally)
Tonal value: brighter, darker

Falls into the sphere of COLOUR
Colour value: more delicious, more beautiful, better, too deep, too bright, two bright, too thin, too hot, chilling, ugly.

Falls into the sphere of SPACE
Spacial value: closer, further, softer, harder

5th Exercise: Monday, 26 June, 1922
5th Exercise: Scenes in a store.
The problem is to combine these dimensions in a composition. To arrive at an organic combination of measure in two pieces.
weight — (tonally, tonal value)
quality — (design, positive characterization of the design)
Sixth in understanding of the function of movement and of the organic relation between the elements. Six to points to the developing balance of forces, the color, accent on emotion.
Measuring and weighing can appear as structural rhythms (disks). Linear and planar measure make it possible to include the concept of line.
Cf. p. 217; also the organic combination of two and three factors, p. 239; and the three-part organism with active, passive, and kinaesthetic functions, p. 239-40.
Nature can afford to be lavish in all things; the artist must be thrifty in every detail. Nature is loquacious to the point of confusion; let the artist be silent and orderly. Never work towards a ready-made pictorial impression. Give yourself entirely to the development of the part you are painting. Reduce the whole to a very few steps, let the general impression rest on this principle of economy.

Will and discipline are everything. Discipline in respect to the whole work, will in respect to its parts. In this connection, will and ability are largely the same; without ability you can have no will. From these parts the work is made, through discipline directed toward the whole.

If my pictures sometimes make a primitive impression, it is because of my discipline in reducing everything to a few steps. It is only economy, or if you like, the highest professional sensibility; in fact the precise opposite of true primitivism.

Having gained new strength from my naturalistic studies, I can venture to return to my original field of psychic improvisation. Now that I have only the most indistinct ties with a natural impression, I can venture once more to express whatever happens to be weighing on my soul: to record experiences that might be transposed into line even in the darkness of the night. This possibility of new creation has long been with me, interrupted only by the anxiety of isolation. Now my true personality will speak, now it can move in perfect freedom.
From the very beginning, and with time more and more clearly, I have seen that my task here is to communicate the experience acquired in my own work of ideal figuration (drawing and painting). This experience concerns the building of multiplicities into a unity. I communicate it to you partly in syntheses, that is, I show you my works; and partly in analyses, that is, I divide the works into their essential parts. I let you play with them and if you break these toys to see how they are made, you have my approval.

For the most part, we deal with combined forms. In order to understand combined forms, one must dismember them. In nature for example: at first glance you do not perceive how the natural law works. You must first look for it, investigate. For nature does not pursue a single aim, but many. The scientist takes his knife and dissects; he is thus enabled to measure the relations between inside and outside. He finds that for internal reasons, as with us in art, something is concealed, overgrown with various other things, so to speak. From the inside, you can understand it biologically. And it is only afterwards that you turn to the visible cloak or to the covering.

In art we follow such an aim, just as in nature, but we are not able to free ourselves entirely from this example.

Our work is given form in order that it may function, in order that it may be a functioning organism.

To achieve the same as nature, though only in parallel. Not to compete with nature but to produce something that says: it is as in nature.

This means of course that those who work receptively have little to learn from us.

The form is the centre of interest. That is what we are striving for. It is the first consideration of our craft. But it would be a mistake to conclude that content is secondary.

No doubt one can make a picture for the sake of the law. But there is no artistry in that. You must take account of everything that transcends the law. The actions that transcend the law play a different role from the others.

To produce form demands less energy than to determine form. In both kinds of formation, the ultimate result is form. From the methods to the goal. From the action to the perfect. From the truly living to the inactive.

In the beginning, the main role, the dynamic impetus. Then the casual growth of the egg. Or: first the flashing lightning, then the raining cloud. Where is the spirit at its purest? In the beginning.
Accordingly, do not think of form but of formation. Hold fast to the path, to the unbroken connection with the original ideal. Thence carry the formative will onward with the force of necessity, until it permeates the particles and parts. Step by step, carry it from the smallest to the larger, press forward until you have penetrated the whole; keep the formative line in hand, hold fast to the creative stroke.

As in all theory, theoretical exercises are an aid in clarification. Exercises differ from theory, they partake of practice. In essence they are not deeds but potential actions which repeat the integral form, and rehearse the step into action. The wide variety of these exercises indicates the importance of the domain; the results which extend into the realm of art, at first a primitive, intuitive kind of art, but subsequently rounded out, enriched, developed into a spiritual art.

I myself have carried out many experiments with laws and taken them as a foundation. But an artistic step is taken only when a complication arises. Thus we have made a number of successful sallies into the realm of art without any self-conscious thought of art.

In summing up we may say: Something has been made visible which could not have been perceived without the effort to make it visible. Yes, you might see something, but you would have no exact knowledge of it. But here we are entering the realm of art; here we must be very clear about the aim of 'making-visible'. Are we merely noting things seen in order to remember them or are we also trying to reveal what is not visible? Once we know and feel this distinction, we have come to the fundamental point of artistic creation.

The picture has no particular purpose. It only has the purpose of making us happy. That is something very different from a relationship to external life, and so it must be organized differently. We want to see an achievement in our picture, a particular achievement. It should be something that preoccupies us, something we wish to see frequently and possess in the end. It is only then that we can know whether it makes us happy.

"The calligrapher is 'mediator' writing, an integral drawing is involved in the typical character of the handwriting. In this connection Chou comes to mind. The Chinese do not look on painting as a technique, a craft, but then it is calligraphy. In the Chinese view the essence of calligraphy consists not in the neatness and expressiveness of the handwriting, which can easily lead to stiffness, but in the endeavor to express what one has to express as perfectly as possible and with the greatest economy of means. To bring out this calligraphic character in drawings or painting is a part of the artist's craft. Hence an additional art in clarification. The more capable our handwriting is of writing, the more sensitive become its signs."
Subject and parts. In my striving for content, in my striving to avoid calculated formalism, I gave many different names to the relationship between the parts, the way in which they work together to form a whole. With a view to deeper understanding, I explained it on the basis of many different concepts.

But obviously the thing can’t be done with precepts; like nature it has to grow. The way to Weltausschauung is productive, it builds up spontaneously with time. The more often it is travelled, the plainer becomes the trail.

Genesis as formal movement is the important thing in the work. In the beginning the motif, injection of energy, sperm.

The work formed in the material sense: proto-feminine.

The work as form-giving sperm: proto-masculine.
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<th>Gebiet</th>
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<td>Musik</td>
<td>Melodie</td>
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<td>1. Erste Stimme</td>
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<td>Choral</td>
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<td>Psychologie</td>
<td>Haupt und Nebenhorizont</td>
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Field construction
Gebäude
Gehör
gerade Zahlengerüst
Ganzheitliches Gebäude
Hauptgrund
Formen
Formen der ersten Stimme (verschiedene)
Formen der zweiten Stimme (verschiedene)
Formen der dritten Stimme (verschiedene)
Formen der vierten Stimme (verschiedene)
Formen der fünften Stimme (verschiedene)
Formen der sechsten Stimme (verschiedene)

Kunstgeschichte
Mensch
Naturgeschichte
Reihung
pathetisch
präzision
Säulen
Stilistik

Kensische
conic
history of art
non
natural history
extolling-directive
to Impression
Tafel
Ursache
Wirkung
zebra
zweiter Grass

Phänomen in the extended sense of Wahrnehmung (Wagner, Beethoven, Mozart) and in the restricted sense: logical, psychological, rational, irrational, etc.
New example of this:
A comes jostling,
A and M fall jostling,
P lies jostled.

This, of course, is not to be learned by heart. Everybody will feel at home somewhere in this table (pp.498-99). Perhaps it will fit in with the picture you are now working on, if so you can analyse it for me, both as to form and content.

We should not hesitate to follow our bent, but when it comes to the result, in the absolute sense, that is, there has to be a solution. If a picture is good, one must be inwardly satisfied even if one disregards what it represents.

Everything passes, and what remains of former times, what remains of life, is the spiritual. The spiritual in art, or we might simply call it the artistic. In everything we do, the claim of the absolute is unchanging.

Beauty, which is perhaps inseparable from art, relates not to the object but to the pictorial representation. That is why art overcomes ugliness without edging it.
We leave the immanent world and build into a transcendent one that can be all affirmation.

Abstraction. The cool romanticism of this style, without pathos, is astonishing. The more horrible the world is (as today) the more abstract art will be, whereas a happy world produces a realistic art.

It is interesting to observe how real the object remains in spite of all abstractions. One can often feel a difference in abstract art. Does the abstraction go so far that the real disappears, is dehumanised, or not? There are times when something almost seems to be portrayed after nature, from a model so to speak: a wire model or something of the sort. This kind of abstraction seems to excite our curiosity. But is it abstract? The whole thing need not always be clear, but if you work through it lucidly, you may ask yourself: how is that? what is that? You can imagine a mixture of the clear and unclear, which will be convincing if the proportions are right. Then it has to mean something. Abstraction in a picture is absolute, and perhaps can only be recognised as such by psychic feeling. Just as the abstractness of a piece of music or a poem is not in the theoretical structure but exists and is felt for itself. Thus it may be a mistake to speak of abstract art. This kind of abstractness is constructed, made. It's not a question of adding or subtracting; either something is there, or it is not there.

In abstraction, reality is preserved. We find a bridge to the experience of reality. A way of mastering the conflict that is the stuff of life with all one's senses, of tracking down its meaning, while striving for supreme development.

I have been trying to instil more life into your work. So much for that. The power of creativity cannot be named. It remains ultimately mysterious. What does not appeal to us in our foundations is no mystery. Down to our finest particles we ourselves are charged with this power. We cannot formulate its essence but we can, in some measure, move towards its sources. In any case we must reveal this power in its functions. Just as it is revealed to us. Probably it is only a form of matter, but one that cannot be perceived with the same senses as the kind of matter we are used to. Still, it must make itself known through the familiar kinds of matter and be at one with them in function. Merged with matter, it must enter into a form that is alive and real. And it is thus that matter takes on life and order, from its smallest particles to its subsidiary rhythms and its higher structures.

Creation lives as geneses under the visible surface of the work. All those touched by the spirit see this in retrospect, but only the creative see it looking forward (into the future).
This is an alphabetical glossary of words and phrases, mostly relating to colours, which occur in diagrams between pages 665 and 671.

N.B. Colour mixtures and colour tones are indicated by compound words, e.g. 'green-black' for yellow-green, 'flesh-brown' for light brown.

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1837/8: Children's playground.
Possibly red chalk.
V. The order and nature of pure colours

Topology of colour relations

Finite and infinite movements of colour on the plane

Partial colour actions and colour totality
1. Order in the realm of colours
The finite colour series and the infinite blending of colours
Diametric and peripheral colour relations

Tuesday, 28 November 1922

The rainbow as a finite colour series
The pure colour scale
The spectral colour circle
* Note in Appendix.

I shall try to tell you a few useful things about colours. In this I shall not limit myself to my own observations, but in order to tell you these useful things, I shall not hesitate to draw on specialists in the field and others. Goethe, Philipp Otto Runge, whose colour sphere was published in 1810, Delacroix, and Kandinsky, author of Concerning the Spiritual in Art, to mention only a few.

The first part of my undertaking is to set up a kind of ideal paint box, in which the colours are arranged on sound principles, a kind of tool kit if you like. Nature is full of ideas about colour. The world of plants and animals, mineralogy, the composition that we call the landscape; all give us something to think about and to be thankful for.

But there is one colour phenomenon that rises above all the rest as a symbol of all use of colour, all mixing and blending of colours. As far as its purity of colour goes, we may call it abstract. I am referring to the rainbow.

Quite significantly, this exceptional phenomenon, this pure colour scale is to be found not on the earth but in the atmosphere, the intermediate realm between earth and outer cosmos. We may therefore expect it to have a certain degree of perfection, but, since it is only half transcendent, not yet the highest.

But here again our creative faculty enables us to transcend the inadequacy of appearances and to arrive at a synthesis, at least, of transcendent perfection. We assume that what comes to us only imperfect as appearance exists somewhere without any imperfections; the artist’s instinct in us must help us conceive the form of this flawless state.
But what is the flaw in the rainbow as we see it? ... Someone picked out a series of colours, seven of them with the names

and people were very pleased with the number 7. After all, they said by way of confirmation, there are also seven tones in our musical scale.

But much as the number 7 appeals to me in certain respects, I have no faith in it here. For red-violet and blue-violet, or indigo, as it is called in the schoolbooks, is a rather subtle division!
We all of us know that green, orange, and violet differ in kind from red, yellow, and blue; I can anticipate this much without spoiling the surprise that is in store for us. But what about red-violet or blue-violet or indigo?
The first important point is that the arrangement of the colours in the rainbow is linear. We must not forget that in the rainbow a yellow point matches along in a line, side by side with a green one, and a green point side by side with a yellow one, etc. [1].

We must not forget that when we extend the arc into a circle we still do not have a complete colour circle; what we have are seven coloured circles, one within the other [2].
A linear representation of a plane, in this case of a circular plane, has a drawback. A circle formed from a red line is not yet a red circle [3].
For, as we have said before, such a representation of a plane is not active but only 'middle'. This red or blue or yellow line does indeed convey a planar impression, but it is not itself a plane; it remains a line.

Thus we can safely call the rainbow a linear representation of colours; we can also say that as a colour chart it is inadequate. We learn very little from it, and about the relation between the colours nothing at all. That is perfectly clear.
But the main flaw consists in the finiteness of this colour series. The pure colours are transcendent. The immediate realm of the atmosphere is kind enough to communicate them to us, but in an intermediate form and not in their transcendent form, which must be infinite.
The discrepancy of the two violets becomes more interesting (important) when we learn from the scientists that there’s something queer about the ends; there is something beyond the red, something that behaves like heat, and the blue end also has its secret, which is manifested as a chemical effect.
In our frantic thirst for colours we might be tempted to conceive of two additional pure colours to which our eye is not attuned. But we shall not be so rash.

We shall simply say this: that we are dealing with two halves, that the two halves should become a whole, the two violets one violet, and that the two mysterious ends of the one string should be tied together at infinity (endlessness).

And the thing without beginning and end that results looks like this:

The six colour tones of the spectral colour circle (the rainbow seen as a ring)
Now we no longer have to oscillate, swinging from 1 to 7 and, with the countermovement that replaces infinity, back again from 7 to 1, searching here, searching there, trying to get away, returning home. Instead:

We leave the human realm, the realm of the higher animal, the realm of pathos and striving, of the spirit-body, the half-static, half-dynamic intermediate realm symbolised by the triangle, where the pure colours are only half at home. We free our pendulum from gravity, we let it fly to the divine, dynamic realm, the realm of the spirit, of complete rotation and whole movement, the realm symbolised by the circle, where pure colours are truly at home. Now 1 and 7 coincide, and the place we were worrying about is simply called violet.

The spectral colour circle

This cosmic concept of pure colours has found its appropriate representation in the circle. The rainbow, the terrestrial manifestation of pure colours, is a mere reflection of a hitherto unknown totality, the transcendent whole that we have now produced by synthesis. The colour circle is now before us. Or in reverse we may see violet as the breach made by the power which humanises and transforms the things of God to show them to us. This assault was made on the colour circle at violet. The colour circle stretched and tore; a column of coloured points marched off, and that was the rainbow.
First of all, the riddles of the finite colour series are solved or cease to exist. We are no longer baffled when the scale comes to violet, and we are no longer faced with such problems as infra-red and ultra-violet. The new movement along the circumference of the circle—I should like to call it peripheral movement (scale)—lends itself perfectly to endless interlock and flow.

That is one aspect of the novelty. The other is disclosed in the three diameters with which we can connect the six colours, dividing them into three colour pairs.

Thus we have on the one hand a peripheral movement and on the other hand movement across the diameters. ¹

² C. F. the summary "on the nature of pure colour", pp. 57-58.

The second aspect of our new discovery is very promising. The three diameters connect first red and green, second yellow and violet, third blue and orange. All three intersect at one point, the centre of the circle.

The picture looks suggestive. Surely there is a deeper meaning behind it. What can it be? Experiment shows that if we expose our eye to red for a while and then suddenly look away, an astonishing after-effect is produced: we see not red but green. Or when we expose the eye to green for some time, the after-effect will be red.

By the same magic, yellow and violet alternate, as do blue and orange.

Anyone can determine the three colour pairs in this way and convince himself of the phenomenon of complementary colours. Another little experiment will teach us a second lesson:

⁴
We divide a strip of white paper into seven fields. Except for Field 7 we coat it with thin, pure red water-colour. After the red coat has dried, we coat the strip (except for Field 1) with thin, pure green water-colour. When the two coats are dry, we perceive a reddish Field 1 and a greenish Field 7. In between there are five colourless fields 2-6.

We now enhance the rather feeble effect of these first two steps by continuing the operation. Alternately we add red from above and green from below; first five red fields from above and five green fields from below; then four red from above and four green from below, then only three red from above and three green from below. And so on, each time less red (from above) and less green (from below).

In the language of painting this way of mixing colours is called glazing. Separate coats are laid on at intervals. At each step something is added; from left to right less and less, from right to left more and more. The result, or rather the sum, remains the same.

By the gradation of our coats we obtain a precisely graduated movement from red to green-red to green, or the other way round.

1 all red in the 1st field;
6 parts red, no part green
no part red, 6 parts green
4 parts red, 3 parts green, in
between 2 red and 2 green gradations
5 in the 2nd field:
6 parts red and 4 parts green
3 in the 3rd field:
4 parts red and 2 parts green
2 in the 4th field:
2 parts red and 4 parts green
1 in the 5th field:
1 part red and 5 parts green
4 in the 6th field:

It is easy to see how the red and green diminish towards the middle and balance each other out in the fourth red-green or grey field (although thereafter the colours increase again).

Towards the middle both colours diminish in hue as the quantities of red and green approach equality. No direct use of grey has been made and yet (purd) grey has been created in the fourth field where the colour quantities are equal.

This median colourlessness decreases both to left and right, to the left in favour of increasing red, to the right in favour of increasing green.

This reciprocal red-green scale reminds us of the movement and countermovement of our pendulum.

It also reminds us of the mobile scale which finally comes to rest at the grey intersection, but this should not be taken to mean that red and green lend themselves to static
treatment with all red on the left and all green on the right. That would hardly give us a picture of their reciprocity. Both green and red would have to jump back and forth (form-building).

In summing up I can say this about the green-red pair:
1. Each colour calls forth the other in the eye.
2. Between the two colours stands grey.

I could make the same demonstration with the two other sets of diametric colours, yellow-violet and blue-orange. But for the sake of variety I shall give you a more geometrical illustration, which is applicable to all three diameters of the colour circle.

In this case we have at one end a violet, at the other a yellow base. Violet has its greatest extension on top where yellow can be perceived only as a point, that is, it cannot be measured. At the bottom yellow has its greatest extension while violet is only a point. If I now connect the yellow point with the yellow base I get a yellow triangle, and if I connect the violet base with the violet point I get a violet triangle. The triangles interpenetrate. Each in itself expresses the diminution of its colour with distance from the base. Now I divide the two bases, into 12 parts let us say. At any point on a line parallel to the base, I can now measure the yellow and the violet content, and the effect will be roughly the same as before when we added coats of watercolour.

Measurement on the violet base shows 12 parts of violet and none of yellow. On the yellow base 12 parts of yellow and none of violet. In the middle 6 parts of violet and 6 of yellow (hence grey). On the violet side near the base, 10 parts of violet and 2 of yellow. On the yellow side near the middle, 8 parts of yellow and 4 parts of violet.

Concerning yellow and violet I can thus say: between them lies grey. Observation of blue and orange would show the same thing. In practice the best way would be to start with a colour that seemed very pure to us, to let an effective quantity of it work on our eye for an effective time, then ascertain the complementary colour by a quick look at a white surface, prepare the complementary colour at the same intensity, and obtain colourless grey by mixing the two in equal quantities in a bottle or on a piece of paper.

If this second test for colour pairs were to fail, we should have to admit that we had not found pure complementaries. Then we should either have to correct one of the complementaries or, as often happens, make a virtue of a mistake and get a richer effect by using consciously false pairs. We shall have more to say of this later on.

For the present let us return to our colour circle and see how well its mathematical character meets our needs.
The radius (half a diameter, that is) cuts the circumference just six times. Through the points of intersection corresponding to the six colours we can draw the six diameters corresponding to the principal colour pairs. The diameters meet in the centre, the grey point common to all colour pairs.

In addition to these three diameters, of course, we can draw as many more as we please; they will be no less correct than those discussed, but will mean something different. The slightest rotation of the diameter round the fixed grey point indicates new colour pairs, which will be correct but less important.

Let us first rotate our diameter to the exact spot between red and violet or between yellow and green. This gives us the new colour pair red-violet x yellow-green. The grey effect of this colour pair is necessarily composed in equal parts of red-violet and yellow-green. Red-violet itself is composed of equal parts of red and violet, and yellow-green of equal parts of yellow and green. Thus the grey effect is composed in equal parts of four components, red, violet, yellow, and green. In my diagram I am free to arrange these four components in any way I please.

If I combine them crosswise:

In this arrangement I first recognise our old friend red-green and then yellow-violet. Each pair produces grey by itself, and the addition of two (nota bene) half-greys does not contribute an atom of colour. The grey effect is demonstrated and with it the authenticity of the colour pair red-violet x yellow-green.
This is how it looks algebraically: $\frac{1}{3}$ red + $\frac{1}{3}$ violet + $\frac{1}{3}$ yellow + $\frac{1}{3}$ green = ($\frac{1}{3}$ red + $\frac{1}{3}$ green) + ($\frac{1}{3}$ violet + $\frac{1}{3}$ yellow) = $\frac{1}{3}$ grey + $\frac{1}{3}$ grey = grey.

With an additional rotation of the diameter round the grey point I run into a new colour pair:

Blue, violet, yellow and orange read crosswise: blue-orange = grey and yellow-violet = grey.

Or algebraically: blue + violet + yellow + orange = (blue + orange) + (yellow + violet) = grey.

A third diametric rotation stops on the one hand exactly between the peripheral colours red and orange, on the other hand exactly between blue and green, and we have another true colour pair:

Red, orange, blue and green, crosswise: red-orange = grey and blue-green = grey, or: red-orange + blue-green = (red + green) + (blue + orange) = grey.

Thus the authenticity of these new colour pairs is proved. Sum of the peripheral colours = grey.

But if, as I suggested above, we make some mistake (or misalliance) in pairing our colours, we shall have trouble with our proof of grey. But it will be worth while to take a closer look at this kind of deviation from the true colour pair, for there is no reason to suppose that colour composition must be limited to complementary colours.

For example, I cannot connect green with orange on the colour circle by a diameter but only by a chord [1]. The orange base and the green base do not run parallel but will soon intersect somewhere [2]. In calculating the result of a mixture of green and orange, I start from the fact that green is exactly half-way between yellow and blue, while orange is exactly half-way between yellow and red. Accordingly, green + orange = yellow + blue + red + yellow. From this I can make certain inferences, both upward and downward:


Hence:

First result: grey + yellow

Green + orange

Second result: yellow + grey

Green-orange

Third result: yellow + grey

(yellowish grey)

(yellowish grey)

(yellowish grey)
The result of this mixture is not a pure colourless grey but a yellowish grey, because yellow is contained both in green and in orange and because the two bases are not parallel but tend to intersect at yellow. Our proof has failed; green-orange is not a true colour-pair.

Another false colour pair, as a glance at the colour circle shows, is violet-green. For green and violet is the same as yellow+blue+red+blue.

\[
\text{Green+violet} = \begin{array}{c}
\text{grey} + \text{blue} \\
\text{yellow+blue+red+blue} \\
\text{grey} + \text{blue}
\end{array}
\]

First result: grey+blue (bluish grey)

Second result: grey+blue (bluish grey)

The result of the mixture is a bluish grey, for blue occurs in both colours, the violet and the green bases are not parallel but tend to intersect at blue.

The third colour pair of this sort is violet-orange.

\[
\text{Violet-orange} = \begin{array}{c}
\text{blue} \\
\text{yellow} \\
\text{blue}
\end{array}
\]

First result: red+grey (reddish grey)

Second result: grey+red (reddish grey)

Third result: grey+red (reddish grey)

The result is a reddish grey. Red occurs in both component colours. The two bases, violet and orange, are not parallel but tend towards a point of intersection on the red side. I think this is enough for today. It will all sink in a little deeper in our practical exercise next week, and then no doubt it will take on more life and expression for you.

The application can be conceived in different ways. Last summer I myself tried out the partial colour actions we have been discussing, one after another in separate pictures. It should not worry us that individual works of this sort are lacking in total effect. We still strive for totality and that in itself produces new things. Smaller or larger groups of partial actions coalesce in a greater whole.
As an application to the Bauhaus, or rather to the building of houses, I suggest that you try this: First choose graduated tones of the three real colour pairs for three different rooms. Each room will provide a part of the general effect, which is based on red, yellow, and blue. The oneness of each individual room will arouse a desire for a compensating oneness which will be reflected in the treatment of the next room. The oneness of the different rooms will have the advantage of setting us in motion towards the other, complementary rooms. An impression of wholeness will result if all the rooms are modulated both in the pictorial and the real sense.

And another time try this: paint three connected rooms in such a way that the tone of each one corresponds to one of the three false colour pairs we have mentioned. Then a feeling of excess yellow will come over us in the first, of excess blue in the second, and of excess red in the third. But since we have modulated all three rooms, the three one-sided impressions will be combined into a total impression of red-yellow-blue.

I have borrowed this idea from our next lecture. We have had a good deal of theory today and I'd like to leave you on a livelier note. However, we shall have to speak more seriously about this idea of a three-colour totality.

Tuesday, 5 December 1922

Exercise at five o'clock
Bring along:
1. Paper that takes water but is not too absorbent.
2. At least two clean bowls.
3. The colours of the periphery; try to avoid opaque colours.
4. Let each coat dry by the stove.

Exercise: Practise the seven-step scale of the real colour pairs according to the indications on pp. 473-480. In the peripheral dimension it is important to find the right localities, that is, to find the green corresponding to the red you have chosen, etc. And in the diatomic direction it is important to measure your qualities carefully; that is, not too much blue, not too much violet.

3. Peripheral colour movement
The canon of colour totality

Tuesday, 19 December 1922

I think we all of us got some fun out of our theoretical and practical treatment of the diatomic movement and gradation of colours at our last meeting. We made certain practical discoveries, particularly in regard to the order of the colours. We learned to place various (indefinite) intermediate tones that had long been known to us. Though we did not always succeed in defining the colour pairs exactly, we at least learned, precisely because it was so difficult and because grey is no more than a point on a large plane, that these relations are extremely delicate in both dimensions. In the diatomic direction we found difficulty in making the ends equal in hue. In the peripheral dimension the difficulty lay in determining the exact point corresponding to another point on the circumference, that is, half a circle away from it. Putting it crudely we should say: don't take too much or too little of any colour and don't pick the wrong colour. The science of optics, it seems, has to meet these two conditions if it is to prove itself in experiment. But we are concerned with other criteria which are only partly related to those of science. And we gain just as much experience even if the result is not the ultimate in perfection.

Peripheral movement along the circumference of the circle.

Today I shall first take up the peripheral movement of colour, the movement that leads along the circumference of the circle. In contrast to oscillating diatomic movement, this movement is endless. It has no ends, no pairs; all its transitions are fluid. There are no interruptions, every beginning is also an end. Uninterrupted movement is above direction. This clock can run backwards too.

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Problem: Seven-step gradation of false colour pairs.
 Whereas the dimetric movement could rise above direction only by breaking off and shuttling back and forth. But this is not to say that the peripheral movement is without character or that it lacks articulation. The qualitative differences along even a short arc are already too great [1]. In the neighbourhood of red, for example, the difference in character between violet and orange is overwhelming.

And yet red is contained in both colours. How enormous must the difference then be between red and a colour that contains no red!

In line with modern thinking I shall not ask: What is red? I prefer to ask: what does it not mean? That is, where does it cease to be effective? What is its scope? And here we shall hardly go wrong if we say that its scope amounts to two-thirds of our circumference [2].

Last time we saw that it definitely did not mean green, for red and green nullified each other as colours.

There is a yellowish red (so-called warm red) and also a bluish red (so-called cool red) [3]. But from the stand-point of red, bluish and yellowish mean a weakening. Thus we must note a diminution of red in two directions or conversely an increase of red from these two sides towards red.

This increase from two sides naturally leads to a peak, to the culmination of red.

Thus I can locate three points on our periphery:
1. the red peak
2. the warm end of red
3. the cool end of red [4]

These three points divide the periphery into a red arc measuring two-thirds and an arc free from red, which measures one-third and lies opposite the red peak.

But I shall make my words rather brief and simply read from my sketches: Blue, as well as yellow and red, has an arc measuring two-thirds of the circumference. The last third is always free: free of blue, free of yellow, or free of red. The third that is free of blue is between the yellow and red peaks; the third that is free of yellow is between the blue and red peaks; and the third that is free of red is between the blue and the yellow peaks.

Each peak, each culminating point, remains for a moment free from the influence of its neighbour peaks. I am now in a position to say not only that red is not green, but also that red is not blue and not yellow, even though it can be bluish or yellowish. In the same way blue can reach out towards red and towards yellow, but never can it reach their peaks. And yellow can tend towards blue and red, but it can never be blue or red.

This is an illustration of these sentences which are as important as they are simple; one might call it the chain of totality.
Every colour starts ever so gently from its zero, that is its neighbour peak, rises to its own peak, and from there descends again slowly to its zero, that is, the next neighbour peak. It is immaterial whether I give this crescendo and decrescendo its naturalistic form or its exact form or an artificial, graduated form (though there must be some exact basis of course).

Naturalistic, natural

exact

artificially graduated

But now something else comes in: The colours on this circle do not sound in unison as the chain might lead one to suppose, but in a kind of three-part counterpoint.

This combined diagram permits us to follow the three-part movement. The voices come in successively as in a canon. At each of the three main points one voice reaches its climax, another voice softly begins, and a third dies away. One might call this new figure the canon of totality.
And now, just as we did last time, I should like to prepare the way for practical attempts at measurement. To this end I must once again unravel the circumference. Then our canon assumes the following form and the notation of a musical canon makes its appearance. The main bars are situated at nodal points in the rotation, namely the points where recurrence of repetition begins.

![Graph showing rotations and color sequence]

Note: In the oscillation of the colour pairs it was different. We had to retrace our steps to get back to the starting point.

This is how it would be in writing: \[\text{\textbf{W} \textbf{W} \textbf{W}}\] a zigzag.

But now we roll ahead in rhythmic circles.

This is how it would be in writing: \[\text{\textbf{C} \textbf{C} \textbf{C} \textbf{C} \textbf{C}}\] a spiral movement.

But not in unison; in several voices.
What comes now will remind you at once of my charts of the relations between red and green\(^1\) and black and white,\(^2\) except that this time we are dealing with blue and yellow. Then I shall show you yellow and red and then red and blue, which brings us back to the starting point. This time there will be only five (arithmetical) steps. The only satisfactory and practicable way of representing the peripheral colour movement follows the arithmetical table. For if increase, culmination, and decrease are not taken into account, we obtain mixtures that are too dark in relation to the pure colours (in watercolour particularly, where the white background plays an important part, our pure colours will be too light and our mixtures too dark.)

\(^{1}\) Cf. p. 474.
\(^{2}\) Cf. p. 484–496.

**Primary, secondary and tertiary colours**

To the left the plan (II p. 492) of the operation, in the middle the computation of the direct content, to the right the verbal characterisation of the mixtures, the indirect result of the operation. Thus green is the indirect result of blue and yellow in equal parts, and orange and violet are similarly related as effects to their causes, yellow-red and red-blue. And so we are justified in assigning different ranks to the colours that appear on the right. Primary, secondary, tertiary colours.

A geometrical picture of the whole process will make it still clearer [3].

---

\[\begin{array}{c}
\text{Primary colours} \\
\text{Secondary colours} \\
\text{Tertiary colours}
\end{array}\]
Now the secondary character of the three mixtures is obvious. Their position in relation to the blue, yellow, and red movement could not be brought out more clearly ([2] p.480). The causal character of the three primary colours is brought out, and the dependent character of the three secondary colours, according to the relationship of cause and effect, is made clear. And now we begin to suspect that there is more to our canon than the range of its notation.

This is the drawing that I called the 'canon of colour totality'.

It circles round in three parts, determined by the three peaks of the primary colours. At each of these peaks the two other primary colours, which do not culminate at this point, begin and die away. But between the three culminations, at the meeting place between the voice that has just culminated and the voice that has just begun, the secondary colours appear, another in each segment of arc. Now in order to represent the infinity of the secondary colours as simply as possible, I can connect the three culmination points of the primaries in a different way that departs from the circle.

At its peak the pure red should contain neither blue nor yellow; it should neither be bluish-cool nor yellowish-warm. But in view of the natural circular movement that is fed by fluid transitions between increase and decrease, this can be true only for an instant. The same is true of the brief pure instants on the blue and yellow hills. The characteristic sign for an instant is the point (1) p.486).
Now the secondary character of the three mixtures is obvious. Their position in relation to the blue, yellow, and red movement could not be brought out more clearly (12) p. 490). The causal character of the three primary colours is brought out, and the dependent character of the three secondary colours, according to the relationship of cause and effect, is made clear. And now we begin to suspect that there is more to our canon than the range of its notation.

This is the drawing that I called the "canon of colour totally".

It circles round in three parts, determined by the three peaks of the primary colours. At each of these peaks the two other primary colours, which do not culminate at this point, bisect and die away. But between the three culminations, at the meeting place between the voice that has just culminated and the voice that has just begun, the secondary colours appear, another in each segment of arc. Now in order to represent the inferiority of the secondary colours as simply as possible, I can connect the three culmination points of the primaries in a different way that departs from the circle. At its peak the pure red should contain neither blue nor yellow; it should neither be bluish-cool nor yellowish-warm. But in view of the natural circular movement that is fed by fluid transitions between increase and decrease, this can be true only for an instant. The same is true of the brief pure instants on the blue and yellow sides. The characteristic sign for an instant is the point (11) p. 496).

1 Crossed out: The characteristic concept for an instant is the point.
By connecting the three points I obtain the equatorial triangle blue-yellow-red (1). But the sides of this triangle are not lines; they are gliding lines corresponding to the varying character of the secondary colours (2). I advise you not to imagine any top and bottom to this triangle; otherwise I should have set it solidly on one side. Think of it as lying flat on the ground (you will soon see why).

If it lies flat on the ground, I can get inside it. If I turn towards red, I have a figure before me which represents the red belt exactly as it is.

If I turn to B, I see before me a pyramid resembling a blue mountain (these actually are such mountains), and turning towards G, I see the yellow mountain. Thus the triangle is a good form for our purposes (but we must really assume that it is flat). We can reach each peak of these mountains from two sides, and there are two paths leading down again. But having come half-way, we reflect for a moment that whether we are headed up or down, we now have half the distance behind us. On every side of our flat triangle these half-way points are neutral points. Here the secondary colours are pure, that is, they contain the two adjacent primary colours in equal parts. Thus the sides of the triangle break down each into two halves, blue and yellow, red and yellow, and red and red (3).

Thus I obtain a new picture of the peripheral movement. One advantage of the triangular representation is that it distinguishes clearly between the primary and secondary colours. Blue, yellow, and red are placed in dominant positions; green, orange, and violet are dependent on them. This is the advantage of the triangle over the circle.

But that is not all. The triangle can also give us a more graphic picture of the sections we have called diametric movement. For example, the red-green section perpendicular to the green side is highly informative. The perpendicular strikes the neutral green point (4).

Complementary movement and component movement

This neutral green point is in turn illuminated by the flanking components of green, blue and yellow (5).

Here we have the movement of the red-green section or complementary movement (6).

And here we have the blue-yellow peripheral movement or component movement (7).
If we consider the construction as a whole, the red vertical runs into the green side (complementary) [1], and the green side is flanked by the blue and yellow points (components) [2]; the yellow vertical runs into the violet side (complementary) [3], and the violet side is flanked by the red and blue points (components) [4]. The blue point faces the orange side (complementary) [5], which is flanked by the yellow and red points (components) [6].

Complementary movements [1, 3, 5]
Component movements [2, 4, 6]

To sum up: The complementary diametrical movements of the primary colours: blue, yellow, red (complementary movements) [7]. The component movements designate the components of the secondary colours: green, orange, violet [8].

But the three complementary diameters (the plumb-lines) intersect at the well-known grey point [9, 10].

Before I go into the three-dimensional, let us catch our breath and move about a little on this surface. There are so many clever people and there always have been. The contrapuntal relation between blue, yellow, and red, the fact that they formed a balanced totality, was recognised long ago. We hear it said that none of the three voices should be absent, that there should be neither too much nor too little of any one. This is a law well worth taking to heart, provided you guard against the asceticism which tries to put the naked law into the actual work.1 Such misunderstandings lead to construction for its own sake. They haunt the minds of narrow-minded aesthetes who give us laws instead of works. Who have too little air in their lungs to realise that the laws should only be underneath in order that flowers may grow from them. That we look for laws only in order to find out how a work deviates from the natural works around us, land, animals, and people, but without getting foolish about it. That laws are only the common foundation of nature and art.

People have been heard to say such things as: Don't use any grey, but only the components of grey, the complementary colours. Grey is already contained in them. Grey arises by itself. Or: Only use the three primary colours blue, yellow, and red, in their most perfect purity. And in their most perfect balance. For they contain all the other colours. Then all the other colours arise by themselves. Such people make a principle of jumping like goats. Once in a while you will want to take a jump like that. But only if it meets some need, never out of principle.

And so I should like to warn you against the impoverishment that comes of taking the law too literally. I should not like you to misunderstand what I have been teaching you. Such a misunderstanding might lead you to end up with nothing but grey, on the ground that it is the centre of the whole and contains all the colours, blue, yellow, and red. And black and white for that matter.
The result would be to outlaw all colours, even black and white. Only grey would be permissible, and only the one median grey. And the result? Would the world be grey then? No. Worse than that. It would be one single grey, one nothing. Why, simplicity can be carried to such absurdity, the ultimate impoverishment, the end of life.

The grey point as total centre

Grey for its own sake

The dominant importance of the three primary colours permits me to characterise their presence as the law of totality in the realm of colour. A few examples will show what this law covers and how I find out if it is fulfilled.

Blue, yellow, and red
In three-dimensional centric representation

1. The conclusion of the law with the works, of the foundations with the house, of the formula with the operation, can be illustrated by the symbol of the three points. They provide the formula of the triangle:

   blue
   red
   yellow

   The triangle flat
   in three dimensions

2. The triangle itself means far more. The three sides symbolise the whole colour movement that takes place on them, the whole periphery.

3. Complementary sectional movements are also triangular in a sense, though the triangular character is somewhat obscured by the fact that the secondary colour takes the place of its two component primary colours. Thus a complementary movement is quite close to colour totality.

   Complementary sectional movement

   Green: secondary colour, components

   blue and yellow

4. The partial peripheral movement blue-red is designated by a symbol inferior to the triangle. The law of totality is only two-thirds fulfilled (two points instead of three).
5. The movement between false colour pairs is supra-triangular, that is, it goes beyond the triangle.

Green-orange = yellow red
       blue

= rectangular or bitriangular

Green-orange is supra-triangular; it has a yellow point too many. Hence the excess of yellow.

Violet-orange = violet red
     red
yellow

Violet-orange is also supra-triangular, bitriangular or rectangular. This movement has a red point too many, hence the excess of red.

Green-violet = blue red
     blue
yellow

Green-violet is supra-triangular, bitriangular or rectangular. It has a blue point that exceeds the formula of totality, hence the excess of blue.

These colour actions, as you see, do not always comply with the law of totality. Some omit a point, some give one of the three points too much weight. Such actions are not total but may be designated as partial. Should they be condemned for this reason? Certainly not. From the point of view of totality they are in need of amplification but they also lend themselves to it.

As I explained in an earlier lecture, time is an essential factor in the pictorial field. Even partial actions take place in time. Hence if a partial action is successful in some respects, if it is well-organized as a part, it should not be abandoned. It can be rounded out later into totality; time makes it possible to catch up with totality, as I recently explained by the example of the three rooms.

For example, the two-point partial action blue-red might be even shorter than it is; even if it extended only from blue to violet, it could still be rounded out into totality:

---

stage 1

blue

stage 2

red

orange

stage 3

green

yellow

Combination of the three stages brings total satisfaction, both as to number and as to weight.

Number and weight²

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I totalise the rectangular partial actions according to their weight.

1st stage: green-orange

2nd stage: violet-orange

3rd stage: green-violet

Or represented in a different way: the three main colour elements and grey, the total equilibrium

1st, 2nd, and 3rd stages combined

Or shown in a different form, the complementary partial action might be rounded out this way into totality.

1923/T 3: Overpaint.
Paste with pigment and pastel on burlap.
Harmony of the northern flora. Oil on cardboard coated with chalk.

The star of the colour elements or of colour totality. The polarity lines join at grey, the common equilibrium.
So much for flat colour photography. I have established and explained all the positions in terms of the surface.

A final effort brings us to a three-dimensional synthesis which takes in the strongest points, the totality points white, blue, red, yellow, and black, and defines the whole geography of pure colour.

Orientation according to the cardinal points of the colour globe:

The colour sphere

The topography of the colours extended into space:

- I: white, blue, red, yellow, black
- II: grey, orange, green, violet

The three colour movements, e.g. red:
- a) peripheral (either towards blue or towards yellow)
- b) diametric (towards green)
- c) polar (towards white or black)

Movement of a colour pair on the spectral circle

5. The position of the pigments on the colour circle

It is customary in this country to limit the scientific aspect of the question to a mathematical-logical proof of correctness. Thus the psychological aspect is neglected, by Ostwald for example. The psychology of the colourist demands the division of the circle into three or six parts (§ is more closely related to the circle than §).

The definition of pure red is more difficult than that of the other colour elements. Thus since pure blue and pure yellow are more readily determined than pure red, attune your pure red so that it gives a good violet when mixed with pure blue and a good orange when mixed with pure yellow. You will already have accomplished a good deal.

The diametric contrasts should be determined by experience, by testing the effect on the eye of a colour and its counterpart. If in relation to red for example you should establish a green which is not the perfect green between yellow and blue, this is less unfortunate than the division of the circle into four or eight. That really hurts!

The metallic tones: gold is a vibration between saturated yellow and a dazzling white. Its definition is variable. Silver vibrates between dark and very bright; its definition is also variable. Copper is a vibration between red-orange and bright light. The metallic tone values must be considered as extraordinary pictorial means.
Position of the pigments in relation to the spectral circle with shifted poles and centre

From the inside out:
- Poles and centre
- Inner grey circle
- Black polar circle
- Spectral circle
- White polar circle

The position of the pigments on the 10-part circle according to Klee. The importance of blue, yellow, and red as primary colours is emphasized by the space they occupy. Psychological experience is taken into account since, in view of their superior energy, the most important diametric contrasts or complements occupy a larger area than the other pairs (quality).
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Notes

On the subject of 'organically harmonious plasticity' Linnaeus told his students:

"The ultimate harmony would be obtained if one approached things from the top so that they have in common, the centre. When you look from there, a kind of tranquility would sett in, which would amount in a complete accord. Such a harmony has its meaning and is valuable as an example but since it would subject both a neutral, or inessential, harmony, it would be bad, an inactive harmony. What we need is an active harmony. This requires discipline. We can devise in different ways, by holding the centre point fast in the imagination before deciding how it is possible. By disciplining we can achieve an active harmony, not the ultimate harmony, but an active one. There are certain desires to division. The matter is engaged. These are just a few notes about the organic law unfolding the pictorial art. It is often possible to know compelling refutation about the organic development of a picture (i.e. condition of the pictorial art must be satisfied harmoniously and organically. Many things come together, but reason demands that they move apart again. The mingling together and merging-presumably organic and harmonious. A symmetry that is too dominant can be tedious, but variation can enrich it. Well-composed pictures produce a wholly harmonious effect. But the harmony is established when he succeeds in order to achieve such a general harmony and must form much part harmoniously. The effect would be weak. For once a first part is brought into harmony with a second part, no third part is required. Only if there is a tension in the relation to one and two, it is a need for three, to transform the tension into harmony. This new three-part harmony will be much more convincing, but one must proceed responsibly, as it is to produce human harmony; not the harmony will be possible. In our search for harmony or pictorial truth we can see, not only with a penchant of form and color; the problem of mystical wholeness also remains to be solved."

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In the first printed edition of "The Crown of Cities", which appeared in 1923, the first section of Chapter 4 from the manuscript version:

"...the ultimate engaged things that were to be seen on earth, things people liked to see or would like to have again, now the reality of visible things is made manifest..."

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Examples of two-dimensional types of irregular projection. (The different types often occur; our distinction between them is to be taken more as a topic of composition than as strict application to the individual work.)

Representation of the surface, i.e. view according to appearance (then in essence: 1927: 4. the last village in his valley of P.R., p. 35).

Interpretation of pedigrees and cortices:

(Three-dimensional transparent).

Spanish transplants and transplanted-aphorisms: (in transparent treatment of bodies or interpretation of minds and souls, essence and appearance are represented simultaneously).

Constructive drawing: Formal points in space, p. 26 (simultaneously true and Helix).


1925:17: Perspective of a city, Watercolour and pen, and ink, Grothmann, p. 216.

1925:4: Disparate objects in space, p. 143.

1925:10: Santa A of R, p. 34.

From the vantage point of the base:


1925:19: Mazzoni's chest dancer, p. 140.

From the viewpoint of another base and obedience:


The structure of the sentence is: **Page 523**

**Isolating mainly with emphasis on base:**

1901: 17: Ground plan (sketch). (Pencil).  
1901: 10: Moving form on ground. (Pencil).  
1901: 7: Pathways on the edge of the skylight. Oil.  

**Simultaneous base and elevation with varying access on the projection of base and elevation:**

1901: 4: Colin de Poncelet. (Graumann, p. 189).  
1901: 11: The way in to the city castle, p. 189.  

**Rhythmic structuring, accent on elevation (spatial-plastic accent observed by structure of airplane):**

1901: 11: Castle hill, p. 189.  
1900: 2: Falby (sk). Oil. (Graumann, p. 189).  

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On shadow-individual synthesis:

1901: 16: Main path and silts path. Oil. (Graumann, p. 189).  

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Construing structural formation and the synthesis of individual elements as the most significant characters of the later work:

1900: 17: Discovery. Paint with pigment.  

"Lower and higher individuals necessarily entirely joined, Lumen-recte and separate physically hostile enemy, but brought together by a clear relationship."
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In connection with the static-dynamic synthesis, Klee notes:

The pendulum exerts a spell of time. It is a symbol of mediation between rest and movement, gravity and momentum. In the act of the swing occurs the world of horizontal, which is based on gravity. The dynamic stresses the curve, which is based on momentum. Thus, the possibilities of combining the two. An amplification of the rigid static analogy in the chapter on behavior.

Simple example:

1831/7: Loose water, 1868/4: Water, 1839/3: Oil, 1838/3: Pigments example with mixed accentuation of gravity and momentum.

1828/7: Tintenmarode (ink marbled), 1826/7: Engraved watercolor on paper.

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1838/2: Klee's note on polytypy, p.398.

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On the causality behind the perception of concentric and centrifugal forces and their synthesis, Klee says:


Examples:


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Klee on the colour theories of Goethe and Plonius: "As we all know, there are many colour theories. We have Goethe's theory of colour, which is probably written out in order to refute Newton's interference. Goethe's work is in the way of deepening our understanding of the psychological, physical, and chemical colours of time. He also treats the new psychological effects of colour. We first need traces of a colour theory and then the first painting in general to Lebrun, Delaunay, and others. Today still colour theories (and lines) have been developed. Two of them in particular we discuss with time. Those of Kandinsky and Orphold. But here we are neither making an obvious nor a chemical colour theory. We must be true and have access to all the possibilities. I believe that the theory of Otto Klee is very much taken from these, or closest to our painting."

1838/2: Otto Klee.

1827/2: Klee refers to Kandinsky's lectures in his autobiographical notes: "In doing so, I would like to remain in the background. All the beginning of the century moves across a moment of the Munich Academy, but neither of us attached deep importance to the meeting. Then, a dozen years later, our first real meeting took place at a time when Munich, artificially, was a free state, the memory of the European verses which produced the Blue Rider. He was more advanced in his development than I could have known his to be a certain point in his career, when some of his works remained in estrangement, culminating in the flabelling reality of the European conflict and later, after a final musing in a muddled blank, a pronounced physical expression. But this was later."

1829/3: Kandinsky's contributions to the theory of colour are contained in the following works:

1829/3: "The Blue Rider" (1912), "Kunst und Kreativität" (1911), "Die Formen der Farbe, Pinsel und Buchstaben" (1914), "Der Gute Sinus der Farbe, Pinsel und Buchstaben" (1914), "Analyse der ersten Elemente des Kunstwerks" (1914), "Die Farbenwelt der Formen, Pinsel und Buchstaben" (1914), "Analyse der künstlerischen Elemente des Kunstwerks" (1914)

1829/3: On the occasion of the 100th edition of "Kunst und Kreativität", Klee refers to Kandinsky in his autobiographical notes: "In doing so, I would like to remain in the background. All the beginning of the century moves across a moment of the Munich Academy, but neither of us attached deep importance to the meeting. Then, a dozen years later, our first real meeting took place at a time when Munich, artificially, was a free state, the memory of the European verses which produced the Blue Rider. He was more advanced in his development than I could have known his to be a certain point in his career, when some of his works remained in estrangement, culminating in the flabelling reality of the European conflict and later, after a final musing in a muddled blank, a pronounced physical expression. But this was later."
on quietly, for him stood, for us others here. The current of thinking between us remained unevenly but fundamentally, until Winckel fulfilled our hope of a new meeting enlivened by our common pedagogic activity, which now to be continued in Dresden.

Today we are on the eve of a great occasion, his birthday. But there is nothing sorrowful about it for one who has followed his course and knows him personally. Somber offerings of wine slowly in the tents are still being brought steps in by very slowly but slowly in the course they have continued. This is not all right.

The conclusion is the place of such acts, whether performed so or late in life, seldom or more frequently, not above the top of the artist and even above the top in which they live. This is what happened yesterday, and it can happen tomorrow in his studies. It is a work in which all functions are concentrated. Today I saw: good morning, coming from the north, I have a little closer to him. He takes a step towards me and my hand feels in his.

JW von Ostwald.

On Ostwald's theory of colour Klee has the following to say in a letter to Marie Hilbert-Driemel, first published in 'Die Ausstellung der modernen Kunst: Die Künstler der 20er Jahre',_at the time I understood the definition of most painters for the scientific study of colour. But I decided to wait a little while to see whether some benefit might not remain from my reading after all. And actually a few little variations have stayed with me. One such item is the assertion that the science of essence promotes musical abstraction. It is not an

1. Writings of Paul Klee

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With the contribution of Paul Klee, 2nd edition.
W. K. van den Berg, St. Gallen 1951; Henri A. Bronner, New York 1946.
English translation: Concerning the Spiritual in Art and Painting in Paris, Stucklam, Witten, 1941.
English translation: Concerning the Spiritual in Art and Painting in Paris, Stucklam, Witten, 1941.

Three quotations from Klee's articles:

1. In the Catalogue of Paul Klee Memorial exhibition, Museum of Art, San Francisco 1941.
2. From a letter to Galia Schwyzer, June 20, 1941.
3. From the letter to Galia Schwyzer, October 1, 1941.

Extracts from Klee's letters as well as the letters of his father and mother.

Extracts from the journals 1909-1960, Issues.


Lettres

Three quotations from Klee's articles:

1. In the Catalogue of Paul Klee Memorial exhibition, Museum of Art, San Francisco 1941.
2. From a letter to Galia Schwyzer, June 20, 1941.
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Extracts from the journals 1909-1960, Issues.

Coloured paste on paper Felix Klee, Berne 404 401
Gouache Klee-Stiftung, Berne 446 417
Paste on cotton Paste with black pigment on paper Klee-Stiftung, Berne 142 401
Papier mixte with paste, on paper Privately owned, Berne 5
Watercolour mixed with pastel on paper Felix Klee, Berne 208
Pigment mixed with pastel on paper Felix Klee, Berne 18

Dynamics based on the square and the triangle, in part related to the cube. The plastical use, set in motion by fertilisation and growing Synthesis of operation and appearance

Frei in circle (1922)

Endless – endless

Facetless edges from the 'Theory of Articulation'

Construction of a cube by

An organ investigated with a view to its inner being

Polyhedral synthesis with a lens-action subject

Constructive drawing from 'Metal points in space'

The truth about a permanent umbrelle

Movement-conditioning space and time

Free-formed polyhedral organs

Spinoplastic interpretation of two different scales (projection of two forms into a higher unity)

Variation on 1924: A I: Entanglement

Combined operation on horizontal and vertical planes

Construction of a nature progression

Construction of a space with dispensed centres

The equidistant by the sea

Shifting viewpoint

Six viewpoints united and summarized in a median collective viewpoint

The subjective way to the construction on 3,2,1

Four viewpoints on the same disproportions as in (1) and (2), p.130

A 20°-eye view towards the building of the direct and indirect views from A to B

Balanced cubic construction with prearranged shifts from the vertical area

Lubera in static and dynamic postures

Examples of structural structural rhythm and 'individual structures'

Structural variation based on a set of constructive principles

Basic possibilities of structural formation

Projection on regular base, and temperate projection on curved surface

Three-part polyphony

Facetless rhythm and the dynamisation

Key of French

Material example after a three-part movement by J. S. Bach

Examples with transposed dynamic activity

Free movement on constructive foundation

Tensorial and spatial movement combined

From progression or expression of the radius to the orbit

Two broken spirotes
Towards a theory of form-production

1. Aesthetic Natural History.

The living forces.

1.2. A. Aesthetics.

Abstract and concrete.

1.3. The concept of form.

1.4. Orientation on the surface and in space.

1.5. Orientations in the pictorial space.

1.6. The concept of artistic creation.

1.7. The content of pictorial form.

1.8. Iconography.

2. Objects in nature investigated in regard to their inner being. Essence and appearance.

2.1. Function and essence in art.

2.2. The work and the line.

2.3. Form in nature.

2.4. The work as a mirror image of the.

2.5. The nature of the pictorial image.

2.6. The dimensions and the concept of movement in pictorial space.

2.7. The nature of the pictorial image.

2.8. The dimensions and the concept of movement in pictorial space.

2.9. The nature of the pictorial image.

2.10. The dimensions and the concept of movement in pictorial space.

2.11. The nature of the pictorial image.

2.12. The dimensions and the concept of movement in pictorial space.

2.13. The nature of the pictorial image.

2.14. The dimensions and the concept of movement in pictorial space.

2.15. The nature of the pictorial image.

2.16. The dimensions and the concept of movement in pictorial space.

2.17. The nature of the pictorial image.

2.18. The dimensions and the concept of movement in pictorial space.

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2.20. The dimensions and the concept of movement in pictorial space.
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100.2. From the formal beginning, a whole

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248. The balance of forces between horizontal and vertical forces (Lever and plane).

249. The balance of crossed diagonals.

250. Arithmetical balance.

251. Question of balance in terms of the three implicit pictorial elements, extraneous (the unknown plane), form, value, and color of the character.


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260. Quality, quantity and relativity.

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268. Weight structure in two dimensions. (Chiswick) (a).


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273. Exercise of structure and individual structure.

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286. General structural concepts and criteria.

287. Organisation of structural characters. Decrease and increase of complexity units.

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289. Rhythmic structures with flexible base.

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299. Rhythm correlated through human vision.

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303. Structural rhythms in static form. Further translations into the pictorial realm.

304. Cultural rhythms.

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306. The rhythm of the whole. Two and four-part time.

307. In the pictorial field, the passage of time involves it to movement of the ground plane. Right and wrong-connected two-part plane.

308. Rhythms and fluid movement.

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312. Antitheses in varying times and types of movement.

313. Rhythm and fluid system of art.

314. Quantitative and qualitative representations of rhythmic structures.

315. Pictorial representation of a musical theme.

316. Frontal pictorial symbol after a three-part movement by J. Beck.

317. Horizontal and vertical relations of two or three voices in respect of individualisation (individual and structural character of these voices).

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319. Tonal rhythms and two-dimensional three- and four-part time.

320. Dualistic rhythms: in the figurative arrangement.


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323. Examples: Composition of individual and structural rhythms.
1. Different possibilities of movement.

Types of rhythmic structure.

Random and complex examples

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Primal motion as a norm in the cosmos.

Anaphylaxis as the hallmark of structural rhythms.

Polyphonic interpretation of individual rhythms.

Polyphony.

A music exercise.

Combination of structural and rhythmic melody, melody exercise with structural accompaniment (qualitative and quantitative entelechy).

Vocalization in two voices, individual and structural themes.

Individual forms, division based on weight (qualitative) maintaining strict individuality.

Composers of combined individual and structural rhythm.

Rhythms with loose and rigid structure.

Dynamic individuality, based on tonal-dynamic structural rhythm.

Compositional form.

 hurdled and vertical alternation of structural and structural planes, physical constraints on movement.

Scales and homotones in symbols of activity. The fragmentary and phantom associations.

The surface of the earth and its power. The earth's layers and their dislocations.

Earth, Water, and Air.

Terrestrial limitations and a helping hand from the atmospheric and watery cone.

Primal movement as the norm in cosmic space.

The white thing moves.

Movements in air and in earth.

Rhythms with flying and rigid articulation.

Movement in one direction, extended (irregularly in relation to norm and abnorm).

Movements in water and air.

Cosmic and atmospheric.


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Exercise: Construction of right and flowing (or linear) rhythms.

504 Dynamics and motion.

The natural organization of movement as relating for movement and execution of movement.

The function.

Organic combination of two or three factors. Organic exploitation of individual and structural articulation.

Combination of rigidly articulated characters with loosely articulated ones into an organic whole (a composition).

Spatiotemporal stage in choreography. Growth and diminution of two elements.

Organic combination of two elements.

Two unrelated heterogeneous objects.

Another type of relation between two heterogenous factors.

Conflict and adaptation.

The concept of structure in nature.

Structural concept in return the grouping of the smallest bodies in matter.

Material structure in nature. Antithetical example.


The motor function.

The natural motor organ (Relations between bone, tendion and muscle).

The idea of motor organization.

Diagram in qualitative-spatial terms.

Proportion of the function values according to importance. Reality of structural and individual functioning.

Exercise: Organizing in three parts with reference to a weight scale and linear scale.

Movement is involved in all changes. The history of the work as a process. The function of the work as art. The nature of real forms of movement and the organic connection between these.

Appropriate choice, formulation and realization of organs.

Three-part organism with active, middle and passive function. Linguistic concept: ideal and natural order.

Essential organic bond.

This Water Mill. First example.

Metaphor and appropriate concept of principal and subsidergetic parts.

Variation on the water-mill example.

The Plant. Second example.

Complex of relations: root, mouth, growth, leaves, flower.

Variation on the plant example: reproduction. Function of the flower. Representation of natural growth in longitudinal section and cross-section.

Analysis of 1982/79: Cosmic form.

Growth as a spatial and structural organisation.

A Cycle. Third example.

Voluntary and involuntary movement.

Movement caught in the work. Movement in an organism of becoming.

Production and intrinsic movement.

Productive movement takes time. Conformism, productive movement. The history of the work is clearly defined.

The receptive process. Step 1.

The path of the one and the organisation of the work.

Four examples of the function of form. The idea of the mass of matter.

Overcoming of material gravity.

Combination of the material and the idealistic interpretation.

Overcoming of quantification, replacement by centrifugal force.

Description of the nature of real forms of movement. Exercises: Combination of static and dynamic features in movement.

4. Successions, or the temporal function of a picture.

Movement as action and form.

The real forms of movement.

The function of a picture: the way in which the movement of the picture's genesis got to the eye. Every word moves in time as it comes into being (productive) and as it is approached (receptive). The eye is first attracted to the most intense development of pictorial awareness.

Successions, a movement in time.

Receptive processes.

Product with central character, represented centrally.

Functions of a picture and forms of movement. The closer we come to the essence of the function, the more we are in the forms of the movement.

Irregular arrangement of values. Receptive presentation and the correspondingly functional diagram.

Recept, Descript, and Action.

Recept, Descript, and Action: Two processes in which the movement to which a formal element develops into a new form, the element is not necessary in producing a dynamic form.

A variable dynamic is created only by successive growth or diminution in respect of the energy employed.

5. Symbols of the figuration of movement.

The line.

The pendulum - characteristic ability to maintain the compensating interaction of movement and counter-movement.

Symbol of the interrelated rhythms, between statics and dynamics, between gravity and momentum.

Analysis of the dynamic function in 1982/79: Osculating caliper.

The pendulum motion with extended units.

Temporal and spatial movement combined.

Static-dynamic tension. Reduction between statics and dynamics.

Gravity and movement.

The circle, the pursuit of dynamic forms.

The spiral. The problem of direction.

Sanswer: the fountain.

The water cycle.

5. Cause, Effect, and the figuration of dynamic forms.

The origin of movement and the synthesis of difference with a view to producing a whole characterized by simplicity and complex movement.

The solution to endless movement.

The arc.

Duration and direction of trajectory.

The string.

Fair of the projective economy of energy and movement of the. Twodimensional movement (the line).

Rifting, and rotary motion of the projective. How far shall I squeeze my revenge? The consequence of the simultaneous immobility of the body and mobility of the spirit is the dichotomy of human existence. The course of the movement.

The African arrow. The symbolic arrow. Shift, tilt, rotation and trajectory.

The paradigm of force, rising and falling tablets.

Inversion, reversing and descending.

Change of direction.

The ternary curve; its fall movement (gravitation).

Pictorial schema of the first, second and third laws of statics.

Composed and eccentric forms, the curve as infinite movement.

Stroke and contorsion is the spiral.

Curve and effect: concentric and eccentric forces and their relationship.

The arrow as synthesis of cause and effect.
340. Exercise: detection causes of gaze effect and represent there is a disease
342. The creation of moving forces
343. The movement of free value (towards white to black). Increase in white, and direction of movement
344. Emotia in colour temperature (cool and warm colours). Rooting and cooling
345. The emotions of colour tones and temperature contrast
346. The dimensions of time value and temperature contrast
347. Synthesis of light and temperature
348. The development of movement and the evolution of light movement. The composite (stimula) operation of decorative parts
349. The centre of gravity and the analytical colour relationships
350. The first topography of the spectrum colour circle
351. The psychical symbol
351. IV. The articulation of the pictorial whole. The organisation of movement. Types of articulation and their evaluation, subjects and parts
352. The distance from the prototype
343. 1. Not the whole that is, but the work in process. The building up of multiplicities into a unity. The development of the whole. Rosettistion
344. Exercise 1. Every more highly developed organism is a synthesis of differences. Components must be given natural character, partial tmsations, parts, authentically movement of light; the line adhered to points
345. The spontaneous movement of a man walking
346. Lines, middle and other character. The characteristic is met in the middle zone
347. Motion vectors
348. Postive-negative plane formation. Extension of a multiplicity
349. Exercise 2. Movements in colour or tonality. (Point)
351. Exercise 4. Graph construction aid the figuration of movement
352. Exercise 5. Scale in a line. Organis. treatment of moisture, weight and quality (colour)
355. 1. The organisation of differences into unity. Subject and parts. General review
356. Exercise 6. From motif to organisation. Synthetic and analytic approach. The development of the whole. Number and pictorial atonality. The quality quality in the art's work
358. The communication of experience acquired from idee figuration. The building of multiplicities into a unity. To define the same as an idea. Artifice and infeasibility in rules. Form production and form determination
359. Unconscious connection with the original idea. The fundamental point of artistic creation: Being is new what is not visible. The purpose of the picture
360. The picture
361. Subject and parts based on many different concepts. The way to synthetising in productive. General or formal movement in the important thing in the work
362. The relation of the part to the whole. (Table of exactness in facilitation)
363. The change between the real and the imaginary
364. The meaning and usefulness of the table of concepts. The aesthetic in art, and beauty
365. Abstraction is a picture. In abstraction, reality is preserved. The power of creation
366. V. The order and motion of pure colour. Topology of colour relationship. Finite and infinite movements of colour on the plane.
Partial colour actions and colour tonality.
367. 5. Colour in the realm of colours. The little colour universe and the infinite blending of colours. Diametrical and peripheral colour relations. The relation as a finite colour series. The new colour scale. The spectum colour circle
368. Mies'a observations on colour. Showing on Grund, Rupka, Dolent and Kendal. Setting up an ideal point
369. The phenomenon of the colour, abstraction of pure colour, yet incorrupt phenomena
370. Seven colours of the rainbow. Linear superimposition and single nature of colour series
371. Pure colours. The unlimited colour series of the spectrum
372. The axonometry and the ideal order of colours
373. This cosmic concept of pure colour finds its appropriate representation in the circle
374. The colour circle and the peripheral and diametrical movement of colours
375. 2. The relations between the colours. Diametrical colour relations. The base and false colour pairs
376. The true colour pairs
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378. Groundwork of pure colour. Mixed or blended by colour
379. Mixed colour relations obtained by painting. Movement of vibrations acting (movement and counter movement) and the evolutive circle which finally comes to rest at the grey interference
380. Picture of rectilinear. Geometrically diagrammant from the three diameter of the colour circle
381. Practical presentation of pure complementary colours
382. The mathematical character of the colour circle in relation to our needs. New colour pairs through the rotation of the diameter. Simultaneous azimuth and circumferential movement gradually deviates and endless movement
383. Balanced movement and counter movement. The colour pairs red-violet and yellow-green
384. Alphanumeric proof of 100% colour pairs
385. The false colour pairs
386. Resulting from three false colour axes demonstrated geometrically and algebraically. Green-orange. Green-red
387. Violet-green. Application of pure colour patterns, and relationship to total effect
388. Exercise: seven step proof of red colour pairs and false colour pairs
389. 3. Profound colour movement. The cause of colour totality
390. From diametrical to peripheral colour movement. Embrace movement along the circumference of a circle
391. The peripheral colour zone demarcated in the form of red
392. Colour zones for blue, yellow and red
393. The circle of totality
394. The pragmatic form of colour zones (endless and discontinuous). Three-part movement: the linear of beauty
395. Practical attempts at measurement. Comparison with musical sound