Paul Klee Notebooks Volume 2 The nature of nature
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J.S.
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Note on the arrangement of the text

Paul Klee's texts and lectures occupy the larger part of the printed page. They are set in the larger type-size. The columns set in smaller type contain quotations from Klee's writings and notes by the editor. Occasionally comments by the editor are also set in the larger type-size, for typographical convenience and where the source is obvious. Here is an example (for the corresponding illustration see p.66):

Creative power is ineffable. It remains ultimately mysterious. And every mystery affects us deeply.

We are ourselves charged with this power, down to our subllest parts. We may not be able to express its essence, but we can move towards its source, infer it as well as possible. In any event, it is up to us to manifest this power in its functions, just as it becomes manifest within ourselves.

In all likelihood, it is itself a form of matter, although it cannot be perceived with the same senses as the more familiar kinds of matter. Yet it is in these familiar kinds that it must reveal itself. It must function in union with matter. Permeated with matter, it must take on the living, actual form. It is this that matter derives its life, acquiring order from its minutest particles and most subordinate rhythms all the way to its higher articulations.

Dimensions of pictures

All measurements are in centimetres, height preceding width. In the reproductions of paintings, measurements indicate the outer limits of the painted surface. For watercolours, colour prints, and drawings, they indicate the size of the work, excluding the mount.
The concept of the infinite as cosmic-earthly tension


The main title 'Infinito natural history' [here rendered as 'The nature of nature'] as a characterisation and Leitmotiv is Paul Klee's and heads the introduction to the section 'Stile, Arche, Stile' (50/1-99).1

In this introduction to the subject of archetypal, the question of style is developed in terms of cosmic history or cosmogony. Klee postulates an absence of gravitation as the primordial state and regards inelasticity as the prerequisite for change from this original state. The concept of the infinite thus applies not merely temporally, but must be understood spatially in terms of earthly-cosmic tension.

As a premise for basic style-setting forms as for the absence or presence of gravitation this concept is an extraordinary in a theory of form that the text is here reproduced in full.

'In the beginning what was? Things moved freely, so to speak, in neither curved nor straight directions.
*They must be thought of as primordially mobile, they go whether they go, in order to go, without aim, without will, obeying no law, taking their motion for granted, as a state of primordial mobility.
*Initially there is but one principle of movement. No law of motion, in other words, no special will, nothing specific, nothing pertaining to order.
*Chaos and anarchy, a turbid jumble. The intangible - nothing is heavy, nothing light (light-heavy); nothing is white, nothing black, nothing red, nothing yellow, nothing blue, only an approximate grey.
*Even the grey is not precise, nothing is precise, all is vague, indeterminate.

'No here, no there, only everywhere. No long-short, only everywhere. No far-near, no yesterday, today, tomorrow, only tomorrow-yesterday.

'No doing, only being.'
The family home in the Oberrungweg, Berlin. Paul's father Max Wilhelm Klee lived here until his death in 1913 and his sister Mathilde Klee (1867-1959) until 1933.

The term "chaos" as a concept does not stand alone, no more than cosmos can be grasped apart from chaos. They are a mutual conceptual duality, they serve operationally, with the support of contrast, tact or explicit.

The only something: mobility as a prerequisite for change from this position. It is hopefully true, at any rate conceivable, and what is conceivable is factual and useful. It is useful as a concept opposed to what may have succeeded, to change, development, nurture, specification, measurement, destiny.

Perhaps it was at least a pause in the course of events, a pause in the cosmic programme that knows neither beginning nor end, but is marked by breaks, halts, let-ups. It is useful, moreover, because it may be creatively exploited for purposes of contrast.
"Gravitation"

"Is the beginning?" what happened?
"Things, presumably gaseous condensations, thickened as accumulations and proximations of their particles. A few particles attracted one another, forming focal groups for further attraction. Once attracted, they established a dominance for themselves and other particles that came within the sphere of attraction. As the group grew, its parts fitted more and more into a hierarchy.

"Reaching out from a main nucleus (a centre), this graduated exercise of power regulated itself by attraction, the nucleus dominating the whole.
"The primordial mobility persisted. Nucleus remained primordially mobile and with it the layers, hence the layers too remained primordially mobile, but only co-mobile rather than autonomous. They did not move on their own, they rode along. They were fixed in their relation to the nucleus, but since the nucleus was mobile, they too were mobile."

In another passage, Klee characterises the concept of the infinite in a context that is also out of the ordinary. Here too movement is the standard prerequisite, extolling in time from beginning to end and leading to circulation.
"The instinctively sensed possibility of going beyond a beginning is characterised further, in the concept of the infinite, which extends from beginning to end (not related solely to the beginning), leading to cyclical motion, where movement is the norm and the question of its inception does not therefore arise."
"The finite circulatory motive in nature for its part characterises paired tensions such as finite-infinite and earthly-cosmic.

Chronology of the Lectures, 1921-24.

The lectures from "Towards a theory of form production" provide the main part of The thinking-eye (Volume 1). They comprise the winter semester of 1921/22 and the summer semester of 1922, with a section entitled 'Review of exercises in general'.
The winter semester of 1922/23, dealing with colour system, forms the concluding part. The dates run from 14 November to 19 December 1922. The last lecture closes with peripheral colour movement and the rule of colour tonality.
The present second volume comprises the 'General system of pictorial media combined with nature study'. It consists of the continuing lectures during the winter semester of 1923/24. In between lay the brief summer semester of 1923. In the summer of 1923, following colour theory, exercise in this field were presumably held for advanced students.

Paul Klee with his father Heinrich Klee in 1929 in the garden of the family home in the Obersteinweg, Berna. Heinrich Klee was a music teacher at the Berne seminary of Hohenst. He died in 1946 at the age of 81, a few months before his son.
At the beginning of every preliminary course Klee always went back to basic theory, while the ‘General system’ represents preparation for an advanced semester. The dating of the lectures makes it possible to view the written notes in chronological order and thus fit them into the Klee papers as a whole. The sequence of the text in this second volume is based on this approach.

The basic organisation of media is the same in both lecture cycles: ‘line, plane, tone, value, and colour’.

Only three brief sections in Volume 1 are devoted to the theory of tone value:
- ‘The movement of tone value (from white to black)’ p. 421.
- ‘The movements of colour tonality’ and
- ‘Synthesis of tonality-movement and temperature contrast’ p. 403.
In the ‘General system’ (Volume 2) the theory of tone value took up approximately a full semester.
The section on tone value has been supplemented with examples, mainly from the ‘Special system’ (601–621). In view of the volume on Klee’s colour system, which is in preparation, this section on colour has not been included in this volume.

Klee’s colour theory might be suitably characterised as a ‘system of colours conceived of as an organic whole at rest and in motion’. It breaks new ground in two areas: colour movement and colour relativity.
Klee represents his colour globe rather like the terrestrial globe in space, on which colour movement takes place peripherally, diametrically, and along the polar axis, or with colours orbiting the globe like satellites or delimiting it like meridians.
The two parts, 'Towards a theory of form production', in Volume 1 and the 'General system' in Volume 2 overlap and supplement each other, although emphasis and local points differ. In subsequent semesters Klee used both manuscripts together and alternately. Numerous marginal notes and page references suggest that he kept reorganising his material in new ways, using it over the full range from preliminary to advanced courses.

Klee's teaching from 1921 to early 1924 was very much of a piece, and what he discussed may be supplemented from both parts.

In the light of his experiences during the early semesters, Klee, in the 'General system', increasingly reverted to nature study as his starting point, representing thought and creative processes in simplified, mono immediate and more graphic form. His geometrical and constructional constitution, on the other hand, further enriched and complicated these processes. It was not until his Bauhaus period that Klee, stimulated by the demands of the lecture hall, began to go deeply into the basic theory of two-dimensional extension.

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Among Paul Klee’s unpublished papers, only the manuscripts on ‘Statics and dynamics’ or ‘Pictorial mechanics and theory of style’ (45/1-185) are continuously dated. In time they follow directly after the ‘General system’.

**Statics and dynamics**

(Pictorial mechanics or theory of style) 45/1-185

Dates of lectures

Friday 29 February 1924
Tuesday 4 March 1924
Tuesday 11 March 1924
Tuesday 18 March 1924
2 July 1924

Concluding lecture.

Current dating of lectures ended with the one on Statics and dynamics delivered on 2 July. The corresponding collection of notes, supplements, and sketches, superscribed ‘Current material on statics and dynamics’ 27/1-189, no longer contains any further complete pieces and running dates.

**Primordial approaches to form, 5/1-70**

Contains no lecture dates. One chapter is marked ‘written in the summer of 1927’.

**Style, archestyle, 20/1-59**

Deals with the structure, balance and relatibility of static and dynamic elements. Stylistic elements are characterized above, Lu, from their basic forms on up and their behaviour is examined from the static and dynamic point of view. There are no running dates.

**Special system of pictorial means, 60/1-121**

Contains for the most part examples of specific mobility of means in respect of both tone value and colour. There are no current dates and no lecture texts, apart from the discussion of several concepts.

Both ‘Style, archestyle’ and ‘Special system’ also constitute documents Klee addressed to himself, with reference to his own creative interest.

**Organisational theory, IV/1-165**

With an incomplete separate part on the same subject, largely identical with his voluminous ‘Constructive theory of composition’. No current dates. Used in teaching for the sections on articulation and structure, rhythms, division and individual divisions and their connection. The main parts have been published in Volume 1.
Klee intended to publish 'Statics and dynamics' (or 'Pictorial mechanics') as one in the series of Bauhaus Books; and in 1929 the Bauhaus Publishing Company repeatedly announced the volume.¹

Expressing the basic duality of form, the term 'Statics and dynamics', often used by Klee himself, describes the substance of the notes with greater precision than the title 'Pictorial mechanics'.

¹ The concluding lecture of 2 July 1926, was first published in the catalogue of the Paul Klee exhibition at the Basile Kunsbuch in 1925.

General and special system

Behaviour of pictorial means at rest and in motion

After 1926/27, the 'General system of pictorial means' formed the counterpart to the 'Special system of pictorial means' (60)–(121).

The 'General system' reviews the conceptual means before they are used in form production, in a state of rest. In the 'Special system' movement is associated with the means. Form-producing tensions and contrasts among various individual forms result in the special kind of mobility that effects the first step from form to form production.

'This reorganisation picks a few characteristic passages from the "General system" and reshuffles them by new criteria.'

People today have become much more aware of the idea of static versus dynamic form than was true in the twenties; and thus these two terms as opposites, as applied to pictorial content, are more appropriate than the ambiguous term 'mechanics'.

Views of Klee's studio on the Klothergasse, Berne, taken around 1929.

1. Foreground. Bimbo the cat; centre picture on the back wall Scheide (self portrait), 1929; 2 (cf. Volume I, frontispiece).

2. Corner cupboard with painting supplies. On top, two reliefs now at the Paul Klee Stiftung, Berne.

Paul Klee in his Berne studio.

[1] In 1929.
*Figuration must be connected with the concept of movement. In the general case mobility ends in rigid rest. As primary values, formative means such as are elementary by nature, but when they become secondary or lesser values, they move to and fro among the firm primary values.

Movement of the means is itself a to and fro between firm points, and this may in turn result in more firm points, like grey, green, orange, etc.

Movement of the means is itself a to and fro between firm points, and this may in turn result in more firm points, like grey, green, orange, etc.

Once established, the whole "structure" of formative means is immovable, immutable, unique. Hence the term general.

One cannot say: Let us do this once again in a different or better way. Perfection is absolute here.

One principle predetermines everything else: The manner of mobility in a composite principle is completely balanced in itself. It achieves this through the regular spacing of the firm points and by the equivalence of the to and fro of movement among the firm points. Thus the whole appears to be governed by a kind of rigidity.
The hand-written text is transcribed in print on the facing page.

Exercises

'General system

Dimensions:
From point to line to area to solid.

1 Lighting (above-below)
Gradation from white to black

2 Horizontal extent (left-right/front-back)
a Peripherial colour
b Diametrically tripartite red, green, yellow, purple
Warmth contrast: blue-orange
Complementary contrast without warmth differential

3 (Solid) three-dimensional
white red black
white yellow black
white blue black

Special systems

Aspects:
Tension: physical, mental
Semblance and essence, e.g. of an apple
Era-logos
Articulation/dividual-individual, single and combined
Single theme with accompaniment—several themes
Interpenetration, mutual exclusion
Creative tension of major individual forms
Organism/organically linked from major forms
Formal function: physical-physical'

This contrast of 'General system and special system' (5/3), outlining practical exercises for advanced students, was written on the back of a letter to Klee from the Berlin National-Galerie of 1 March 1968, and can thus be approximately dated. Conceptually, basic and specific aspects may be distinguished in 'Towards a theory of form production' (Volume 1), as well as in the 'General system', but in practice this would scarcely be possible.
In both lecture cycles presentation of primary values was followed by demonstrations of the special mobility inherent in figuration. The two were indissoluble.

Klee’s theory of tone value gives elementary examples, but going on from there brings in the element of special mobility. Tone value subsists on movement between the poles of black and white, on tension, on interpenetration, on transition. But for movement, polar contrast would be lifeless and rigid.
Constructive figure of composition

Klee opposes 'constructive' figure with 'impressive'.

- Impressive (i.e. causally real)
- Virtual (i.e. in appearance)
- Constructive by nature
- Constructive by semblance

Constructive representation provides certain invariant valence relationships, while impressive representation reveals a naïve joy in expression.

- Impressive
- By semblance
- By semblance without the warp of construction

Klee uses the term 'constructive' as a simplification of the precisely defined concept.

Constructive compositional approaches serve to establish norms and directives in the formative process, and any departure from the acknowledged system must be logically justified.

Klee distinguishes these constructive compositional approaches:

- Schematically fully constructive
- Partially constructive, applied schematic
- Partially constructive figureation:
  - Free choice of detail.
  - Or partially constructive play.
  - Irregular random movement

In the section on 'rules', Klee discusses Irregularity as a departure from the constructive norm.

- Irregularity means greater freedom without transgressing the law. The conflict between universal and restricted applications.
- Partial choice has expressed itself as an absolute structure (essence of the universe) or as a relative structure. Accented, but at the same time susceptible of being measured by the law which forms part of it. All figureation relates 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.'

The overall plan of the general theory of pictorial composition (9/7 and 9/8) suggests many possibilities that stem from linking the theory of constructive composition with the stylistic plane.

It was long an open question what weight should be given the theory of constructive composition combined with nature study, compared with the theory of form and figureation.

Klee's calendar for the years 1920/30 carries entries and data on his lessons at the Dessau Bauhaus made over several terms. They suggest that constructive-geometrical instruction took up much more time than has been hitherto believed. It should be considered on a par with his earlier preparatory texts.

This in turn suggests a shift of emphasis from the form and figureation examples prepared in writing during the early Bauhaus years to the constructive basis of two-dimensional figureation. This shift culminated in the years 1929/30 in Dessau and was concluded during Klee's tenure at the Düsseldorf Academy in 1931-33.
*The general theory of pictorial composition falls into two parts:

A. Theory of constructive composition
B. Theory of style

Line of the theory of constructive composition (in general outline):

A. Fixed normal relations within static and dynamic forms (full and partial constructions). Slight departures, i.e. random movements about the normal interior pathways (side paths).
   To A: Fixed in the static sense means rigidly bound to the vertical. Fixed in the dynamic sense means tranquil harmonisation of free mobility.

B. Sharp departures, i.e. movement against the normal interior pathways.
   To B: Sharp deviations in the static sense are local deviations from the normal orientation of the vertical and the horizontal, but always in the form of verticals and horizontals. Sharp deviations in the dynamic sense are essentially central shifts and shifts of locales dependent on the centre, avoiding the plumb-line and its closest forces.

Link between the theory of constructive composition and the stylistic plans:

A. Theory of constructive composition.

Questions:
1. Are the interior constructive relations of form and format maintained? Are there random deviations?
2. Is there a complete departure from interior constructive relations? Is this done while coincidentally normal constructive relations are also given form? Or are the latter omitted?

B. Theory of style

*Questions: Are verticals and horizontals present? Rectangles? Are centres and peripheries present? Settled?*

(8/27 and 8/29).

The Dessau Bauhaus schedule 1928/29

Nature study and constructive approaches to composition
Duality treated as unity

Constrive compositional approaches, being exact experiments in the realm of art, provide an additional element to the themes treated in Volume 1.
In *The nature of nature constructive compositional approaches and nature study are contrasted and summarised.* Both bases, the natural and the geometrical rules, are represented in balance, insomuch as possible.
*Contrasting locales,* Klee emphasizes, *are fixed. They permit gliding movement. Treat dualism not as such but in its complementary unity.*

To a considerable extent Klee translates into the constructive realm insight about growth and mobile processes gained from nature. Basic geometrical forms are studied by the same criteria as plants. In respect of their causation, their mobile potential, their interior. Beginning with the elements at rest, centres and random points are set in motion, to the end of reaching efficient organic relationships.

In the pictorial sense, the dynamic forces of natural growth and the tensions of basic forms have this in common: function, movement.
In Klee’s oeuvre the two poles alternate in holding the upper hand, just as they alternate in the stylistic development of the twentieth century.
It is in the formalistic process that the duality of nature study and constructive compositional approach achieves creative harmony and synthesis.

*Algebraic, geometrical, mechanical tasks are training elements on route to the essential, the functional, as against the impressive. One learns to look behind the false front, to go to the root of things. One learns to perceive the flow underneath . . . to dig deep and lay bare, To find reasons, to analyse.*

Klee’s calendar from the years 1928/29 includes current entries about his lectures. In this fashion an overview of the Dessau syllabus has been preserved. Among Klee’s papers, this is the only trace of how the various term courses were built up over two years, and it demonstrates that the geometrical part must not be separated from the text preparations. In practice both increasingly formed a mutually complementary unit.
From the preliminary course to the fifth term there is an alternation of portions from the theory of articulation, the general and the special systems, the theory of organization, and of statics and dynamics as related to questions of style.
The constructive aspects of planimetrical figuration culled large in Klee’s lectures.
The Dessau lecture plan for 1928/29 is incompatible with any sharp division of Klee's theoretical papers into the verbal and the geometrical-constructive and with the view that the latter were intended more for his own orientation and exercise. The two display an increasingly coincidental relationship, arising from their function as pole and counter-pole.

The link between invariant relations and the stylistic level gives rise to new steps towards multidimensional simultaneity, in the individual form elements as well as in the whole art concept. This was always one of Klee's fundamental concerns.
Monday 1928 9 January
Examples of individual-individual combined. Tension as formal genesis.

Monday 1928 16 January
Weaving.

Monday 1928 23 January
Weaving: basic theory, elementary form. Form is format. Form structures in format.

Monday 1928 30 January
Weaving: inferring the exterior from the interior. Basic theory: form structures from three elementary forms.

Monday 1928 6 February
Form as sum.
Preliminary course: decentralisation of form structure from three elementary forms. Composite form.

Monday 1928 13 February

Monday 1928 20 February
Weaving: trapezoid.

Monday 1928 27 February
Weaving: composite form with surface contact (and also) points.

Monday 1928 3 March
Second semester: arches and straight lines. Irregular progression.

Monday 1928 10 March
Preliminary course, second semester: last lecture. Style, problems.

Monday 1928 17 March
Weaving: subtraction, rhythmic patterns.
Weaving: division.

Monday 1928 24 March
Preliminary course: participants turn in problems.

Monday 1928 31 March
Entrance examination 10 o'clock.

Wednesday 1928 6 April
Selections for permanent collection.

Monday 1928 13 April
10 o'clock, second semester begins.
General system. Tonality, colour. First part.

Weaving: junior course. Theory of articulation by measurement.
Senior course: multi-unitary centres.

No further entries to the beginning of the summer holidays, 14 July 1928.

Tuesday 1928 4 September
Second part of summer term begins.
Preliminary course: composite form based on sexti-, quadri- and tripartite circle.

Wednesday 1928 5 September
Construal.
Rotation, irregularity by use of varying threads.

Thursday 1928 6 September
Weaving: Composite form and rotation.
Multi-unitary centres, as departures from inside. Chapter 14.
Lastly: departures from outside, irregular circumference divisions. Chapter 13a.
Conclusion of theoretical instruction.
Weaving: Chapter 19.

Monday 1928 8 October
No theoretical instruction in basic theory.
Weaving: addition.

Monday 1928 15 October
No theoretical instruction.

Monday 1928 22 October
Construction of the exhibition.

Tuesday 1928 30 October
Begining of the winter semester.
Second semester: introduction and black-and-white.

Wednesday 1928 6 November
Open painting class.
Second semester: colour sphere.
Weaving third semester: black-and-white scales.

Thursday 1928 12 November
Fourth-fifth semesters: division in complex case.

Friday 1928 13 November
Subject: spatial representation in two dimensions. Representation of the front-to-rear dimension.
Front-to-rear as intersections lines with more emphasis or less.

Monday 1928 19 November
Second semester: exercises, diatomic colour stages.

Tuesday 1928 20 November
Weaving 3: gliding, striding, leaping.
Fourth-fifth semesters: formal mediation with tonality.

Wednesday 1928 21 November
Open painting class.

Thursday 1928 22 November
Advanced seminars.

Friday 1928 23 November
Second semester: major-minor.

Monday 1928 26 November
Third semester: major-minor.

Tuesday 1928 27 November
Fourth-fifth semesters: formal mediation.

Wednesday 1928 28 November
Open painting class.

Monday 1929 3 December
Advanced seminars.
Second semester: second semester on 3 and 10 December.
Third semester: unequivocally directional movement based on major-minor.
Fourth-fifth semesters: ellipses—interior construction.

Tuesday 1929 11 December
Free painting class.

Wednesday 1929 12 December
Two hemi-progressions on grey base.

Thursday 1929 13 December
Second semester: shifting, reflection, rotation.
Third semester: as on 3 December, but based on different values.
Fourth-fifth semesters: interior construction of ellipses.

Friday 1929 14 December
Free painting class.
Advanced seminars. Only one student, exercise called off.

Monday 1929 21 January
Weaving: ellipses, shift, reflection, rotation.
Advanced seminars (five students).
Combination of point and line progression.
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Woche</td>
<td>10 Januar</td>
<td>Meeting</td>
</tr>
<tr>
<td>12. Woche</td>
<td>17 Januar</td>
<td>Meeting</td>
</tr>
<tr>
<td>13. Woche</td>
<td>24 Januar</td>
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<td>14. Woche</td>
<td>31 Januar</td>
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<td>15. Woche</td>
<td>7 Februar</td>
<td>Meeting</td>
</tr>
<tr>
<td>16. Woche</td>
<td>14 Februar</td>
<td>Meeting</td>
</tr>
</tbody>
</table>

Klee's time schedule shows:
- Winter semester 1927/28
- Second semester 1928
- Summer semester 1928
- Winter semester 1928/29
- Spring semester 1929

Klee's lessons included:
- Weaving
- Ceramics
- Painting class
- Drawing
- Life class
- Open studio
- Second semester
- Spring semester
- Winter semester
- Spring semestern

Events:
- 1. Number categories of articulation
- 2. Theory of proportion
- Weaving: ellipse, conclusion. Parabola (whole integers)
- Younger: exercises (held over)
- Exercise: theory of organisation (articulation)
- Weaving older [semesters]: parabola, continued
- Weaving younger [semesters]: cancelled
- Bauhaus festival
- Canceled
- Exercise: organisation, homophony-polyphony
- Weaving older [semesters]: hyperbola
- Weaving younger [semesters]: inner revision, complementary
- Called off on account of cold
- Operations at horizontal levels of various heights
- Second semester: genesis of elementary forms, tensions, etc.
- Weaving older course: hyperbola-assymetries
- Normals and tangents. Three conchoids, circular conchoids
- Weaving younger course: augmentation by complementary reversion
- Terminology of measurements of height, width and depth
- Second semester: form in format. Form structures in format
- Weaving older [semesters]: rolling curves
- Weaving younger [semesters]:
  1. Economy (of means)
  2. Conflict between superfluity and deficiency
     a) Numerically
     b) In terms of colour
- Operations on vertical surfaces and combined operations on vertical and horizontal surfaces
- Form structure of three elementary forms
- Composite form – unitary form
- Weaving older [semesters]: cycloids, evolvents, spirals
- Weaving younger [semesters]: superfluity – deficiency
  a) and b) as before
  c) Immediate
  d) mediate
- Frontal surfaces, operations thereof
- Single combination frontal-horizontal
- Spring holidays begin
- Semester begins
There is but one reference to 'basic theory before figuration' (8/99), from Portfolio 81–31, which bears the title 'Introduction'. This reference is fragmentary, as are numerous titles in this portfolio. In many cases neither plan nor design was followed up.

Chapter 1. Before figuration.

'Spatial order of ideal pictorial means at rest.

The objective ends of pictorial means are effective, even when reduced to points. This is less true of the intermediate stages. They require more scope to become sensibly perceptible and measurable, or weighable and critically perceptible. (Or sensibly criticisable.)

It is almost impossible to draw a sharp line between the idea means at rest and the concept of the theory of form. The basic premise must be a principle, but the living figuration must be separated from the general principle.

Sequence of stages

Form: the formal element per se, elementary, as a static phenomenon
Act of forming: must be based on primary process
Figuoration example: straightforward coincidence of forms, based on a process, e.g. a function
Figuoration process: higher combination of formal elements and pictorial processes
This demonstrates the borderline where statics end and event passes into motion, is indeed inconceivable without the mobile process.

In a section on 'Active craft-related movement', Klee characterises this relation: 'The relation between form and the act of giving form, perceived and gained even on the microscale, retained its fundamental significance even in subsequent studies, precisely because it is a matter of principle. I should like to capture this significance in one sentence: The approach to form, supposedly dictated by some internal or external necessity, is more important than the goal, the end of the path... The act of giving form determines form itself, and the process is more important than the form.

'Form must never and on no account be considered disposal, result, and product, but rather as genesis, essence, growth... Good means form as movement, action, active form. Bad means form as rest, an end point.'

What really interested Klee were the processes of thinking and forming, and their functions, the act of forming in terms of living examples.

In essence it is the results that retrospectively set the foundation for basic theory.
Structure of the basic theory

By contrast to the fragmentary and undated reference (8/20), three outlines bearing the general title 'My share in the basic theory' have been preserved.

'My preliminary theory, my share in the basic theory', (8/20a).
This hastily drafted outline follows the concluding lecture of 2 July 1904 in the manuscript 'Statics and dynamics' (pictorial mechanics), or was subsequently inserted at this place.
A second signed outline (8/20b) is more explicit. It is at the beginning of the 'General system' and was thus probably done during the winter term of 1903/04.
The outline reproduced in facsimile opposite (8/20) and entitled 'Klee's share in the basic theory' is dated 'Dessau, September 1925'. It is apparently a final version from the two earlier drafts (8/20a and 8/20b).
The essential content of the three versions scarcely differs. In the final version, in Section b, theory of articulation, following 'primitive rhythmic, gradation of values', a reference, 'melodic or thematic, leadership and accompaniment, counterpoint', has been omitted together with the drawing here reproduced.

Klee's share in the basic theory. Dessau, September 1925. K. (8/20)
(Comes under formal theory 10)

I Theoretical (Lectures) A

Before figuration.
Survey and orientation in the area of ideal pictorial means (line, tonality and colour), their spatial order at last.

B Theory of figuration (combined with nature study).

a General concepts of figuration.
Tensions of means and ends,
Essence and semblance,
Nature and abstraction,
Dynamic forces - limits.

b Theory of articulation,
Primitive rhythmic, gradation of values, melodic-thematic.

Individual and Individual divisions or structures and proportions (and their links).

Pictorial mechanics (statics and dynamics) and the derivation of the concept of style.

With all the sections above, simultaneous exercises (including drawing from life), although these are to be limited to the field of ideal pictorial means (Section A).

Outline of basic theory by Paul Klee. Ed. lower part of facing page for instruction.
Discrimination in the Basic Theory.

A. Before figuration and
B. Theory of figuration combined with nature study; general concepts, tension from way to goal

points in turn to the conceptual distinction which we have discussed in connection with the 'Basic theory before figuration', and which in the practical use of the lecture manuscripts are closely linked to one another.

The summary, done in 1926 after the conclusion of the dated written lectures, shows the overall conception, but scarcely the weight and volume occupied by the theories of tonality and colour.

The structure of the contents corresponds to The thinking eye and to the present second volume, except for the as yet unpublished text part, complete in itself, under the heading 'Pictonal mechanics, statics and dynamics, and the derivation of the concept of style'.

The reverse side carries the title

II Theory of form - theory and practical exercises (9/6a).

There are sketchy remarks relating to the part on practical exercises.

'Nature' (1926.10)

II Theory of form.

'Theory and practical exercises.'

'Analysis of formal elements (orientation, designation, terminology).

'Organic and heuristic contexts (roles, construction, structure).

'Directions for abstraction. Directions for abstract thought and form elements (semblance, essence, schema).

'Distinction among elementary, primary and secondary figuration. Elementary and mixed application of pictorial means.

'Exercises relating to the mutual effect of the elements.

'Figurative exercises: Drawing, painting, modelling, space, 'Draughtsmanship, painting and spatial exercises in form.'

The reference comes under formal theory II under the main title on the obverse (cf. pp.44/46) cannot be clearly distinguished from the enumeration on the reverse.

The concepts of basic theory, theory of form and theory of figuration occasionally overlap and essentially delimit the same material.

The first section of a passage on 'The concept of artistic creation' in Volume 1 does seek to clarify these distinctions:

"The study of figuration deals with the ways that lead to form. It is the study of forms, but emphasizes the paths to form rather than the form itself. The word Gestaltung suggests as much. "Theory of form" (Gestalt) as it is usually called, does not stress the principles and approaches. "Theory of formation" (Formungstheorien) is too unfamiliar. 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 made of functions, so to speak. The functions are purely intellectual. 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."

Klee's retrospective of the last Weimar preliminary course of the winter of 1924/25 again suggests that he kept changing the sequence of his preparatory texts. The logical sequence remains the same in these changes, in which abstract thought and form models alternate with the immediacy of new points of departure that are close to nature.

In the last Weimar preliminary course in the winter of 1924/25 (8/10), I adopted the following sequence:

1. Theory of pictorial means (order in a state of rest).
2. Line
3. Tone

A general example of figuration: From source a (seed corn) paths are foreshadowed, with concomitant effects 1-4 (from within or without).

The point begins to move, and an essential construct arises, stemming from figuration.

The end is but part of the essence (the appearance).

True essential form is a synthesis of figuration and appearance.

The artist: Because of its need for shelter, it is joined to a growing shelter.

The apple: From blossom to fruit ("Casing") I. The violin. The umbrella."

A second retrospective (8/7), dated 12 November 1926, is reproduced in facsimile on p.96 of this introduction. The text is transcribed on p.149 of the main text. A third retrospective, 'done March 1927', (8/4 and 8/4a), numbered 1-9, is given on pp.120-123, as a summary of essential creative possibilities.
Colored paste on ingray paper. 98 × 31 cm.

1985/80n. Scended Table.
Watercolor. 33 × 31 cm.
Theoretical figureation and form figure

Pictorial theory of figureation (8/2) transcribed on opposite page.

Outlines summary
Theory of form and figure

Two overall inventories of the theory of form and figureation are preserved (8/2 and 8/3), as well as a slightly condensed final version (8/3), reproduced in facsimile opposite. The two are undated. They were probably composed in the years 1924-26 and document the growing development and expansion of Klee’s theoretical writings, especially on the geometrical-constructive side.

There is a threefold division:

I General part (concept of the theory of figureation).
II Planimetric figureation.
III Stereometric figureation.

This threefold division as well as the general organization apply by and large to all of Klee’s theoretical papers that have been preserved.

Sections II and III are voluminous and purely geometrical-constructive in nature.

Pictorial theory of figureation (8/3)

Table of contents
I General part
Chapter
1 Concept of theory of figureation
2 General system
3 Special system

II Planimetric figureation
Chapter
5 Approaches to form, tension processes
6 Form processes
7 Form in format
8 Form mediation
9 Form structures
10 Composite form
11 Departure from the norm
12 Change of position
13 Irregular form structures
14 Multi-unitary centres

III Stereometric figureation
Chapter
24 Stereometric figureation.

Articulation
a Rhythmics
b Execution, etc., etc.
15 Free Irregularity
16 Conic sections
17 Wandering contours
18 Pathology
19 Progressions
20 Statics
21 Dynamics, mechanics
22 Interpretations
23 Collection of exercises

Chapter
6 Elementary form
7 Form in format
1940s & 1950s
Canvas, oil, and charcoal, 48 x 60 in.

1950s & 1960s
Paper, charcoal, and ink, 27.8 x 27.9 in.
Publication of the complete table of contents is planned, but transcends the scope of this introduction.

The two tables that are preserved constitute the sole indications of the structure and logical organisation of Klee's literary estate.

Following Klee's flight from Düsseldorf in December 1933, his voluminous writings and drawings were brought to Berne in a steam trunk. This trunk, containing more than 4,000 sheets and the lecture manuscripts, remained in Klee's last studio in the Klettsweg, Berne, until his death in the summer of 1940. Frau Lily Klee's numbering of the portfolios and manuscript sheets was done in the order in which the material was found in the trunk after Klee's death, rather than by any system. In 1996, following publication of the first volume, The thinking eye (in the German edition), Paul Klee's heirs gave the whole of his theoretical papers to the Paul Klee Stiftung in Berne; and the Foundation and the editor took over Frau Lily Klee's numbering system without change.

At Düsseldorf, following his departure from the Bauhaus, Klee was no longer obliged to deliver regular lectures requiring thorough preparation, as was the case during the preceding decade. In Düsseldorf Klee was given a painting class, combined with a seminar of several hours. There was no prescribed subject matter for the painting class and Klee had a completely free hand. During the last two years at Dessau, 1928–29, Klee did some geometrical drawings of considerable complexity, which were probably meant to provide an additional basis for his own creative work rather than for use in the classroom: combinations of a higher order, as a logical demonstration and foundation for his own form-giving. They include 'Shifting viewpoint' and 'The subjective way' (Volume 1, pp.173–178). One of these sheets is dated 2 July 1928; others are sketchily signed with a "K" or "e", apparently to underline the special importance Klee gave to them. Klee was seeking insight into the problems of multidimensional simultaneity, the loosening of earthly statics, for which he sought evidence. These drawings form an important intellectual basis for his later work. When Klee's Bauhaus period ended in Dessau in 1930, his notes and supplements for his teaching activities began to dry up. Outlines for themes and exercises were still being written down in Düsseldorf, like the one here cited, dated 27 August 1931.

Painting class at the Düsseldorf academy (1921–22):
  Cube from nature and something else.
  a. Superficial
  b. Transparent
  c. Anatomically-plastically reunited.
  Cube joined to its environment.
  Surface images, cube
  a. As they appear in the real and the ideal position.
  b. In transparent polyhedral.
  Cube solid, cube-interior space,
  Cube-exterior space,
  The cube and its reflections.
Following his return to Berne in December 1923 and the complete reorganisation of his living and working situation in 1934, Klee made no further additions to his papers dealing with the theory of art. Frau Lily Klee states that during the years in Berne Klee did occasionally take out one of the portfolios and revise certain problems; but despite his expressed wish that his theoretical papers be published after his death, he did not himself prepare any inventory of them, nor did he leave any general outline of their context.

The summary tables of contents that have been preserved therefore provide the only coherent indications of the systematic structure of Klee's theoretical work, as he planned it in the course of his years at the Bauhaus. Nevertheless, many uncertainties remain, in the absence of such a general outline, even taking into account such numbers and titles as Klee did provide for certain sections and portfolios among his papers.

The actual period during which these theoretical writings were done began in 1921, after Gropius called Klee to the Weimar Bauhaus (October–December 1920), and ended when he left Dessau in 1930.

The negotiations that resulted in his appointment, on 1 April 1931, in Düsseldorf, had begun as early as 1920, and with them his interest waned. He emphasised that in the long run he was finding it hard to combine creative work and teaching at the Bauhaus. He seemed to be already inwardly adjusting himself to the impending change. Some additions to the papers were still made in 1930/31, but these included scarcely any major new areas.

The main portions of the written as well as the geometric papers were thus done in the nine years from 1921 to 1929, side by side with Klee's teaching and creative work.

The main purpose of the present survey of Klee's whole conceptual approach to his work as a teacher is to integrate the scattered papers, making comparisons possible for the first time. Many among Klee's surviving Bauhaus students should be able to supplement these papers, either from memory or from notes.

During Klee's decade at the Bauhaus a sweeping correspondence developed between his theoretical and creative work. To compare these two areas would be a task of considerable interest as well as difficulty. Such a comparison might show the degree to which Klee's theoretical thinking influenced his creative work, thus providing graphic evidence of just how much Klee the artist got from Klee the teacher.¹

¹Such a scheme was outlined for the Stuttgart show of 1966, commemorating fifty years of the Bauhaus, but immovable difficulties kept it from being executed.
Concerning the editing of Volume 2

The editor's main task, in bringing out Volume 1, was to provide access to the foundations of Klee's formal and pictorial world and to demonstrate the correspondence between his thinking and creative processes.

The goal was to make the contemporary world aware of the sweep of Klee's ideas.

His paintings were already widely known, but only a very few knew that Klee was a thinker with the gift of precise conceptualisation and formulation. Klee has been for too long assigned a place of intellectual and sociological insignificance. Cubism and the Bauhaus alone seemed to provide a basis from which the formal idiom of abstract art could be given the broad scope in creative history it deserves in the light of Klee's concepts.

Guidelines for the typography of Volume 1 were provided by the series of Bauhaus books, including the Pedagogical Sketchbook edited by Klee himself and published in the series in 1925.

Klee actually prepared the final designs for the Pedagogical Sketchbook from his own rough sketches.

Volume 2 seeks to get away from the model of the Bauhaus books and a certain geometric rigidity which they exemplify. All of Klee's examples and drawings are reproduced in facsimile. The goal was to present the original intact, insular as possible.

Even the alternation of casual sketches and precisely executed drawings has been retained, and some of Klee's notes are also shown in his own hand. Unlike the manuscripts for the first volume, The thinking eye, the texts for The nature of nature are on loosely assembled sheets, which are in a rather parlous state, owing to the poor quality of paper during the postwar period and the period of inflation in Germany. Done for the most part in pen-and-ink, the texts and sketches show through the crumbling brownish woodpulp pages. It was often necessary to touch up the sheets to obscure the traces showing from the other side.

The constructive drawings shown in facsimile are Klee originals, reproduced unchanged. They are done in very fine pencil lines, often in two colours, black and red.

The passages and the form and figurative examples relating to nature study have been extracted from the entirety of Klee's papers. This is true also of the constructive-geometric drawings and formal approaches belonging to this sphere or calculated to throw light on it.
Volume 2 is thus not limited to the lecture notes proper of the years 1923/24. Related areas, problems and notes have been included, giving the book more of a workshop character and presenting parts of the voluminous posthumous theoretical papers for the first time. The road from nature study to constructive-geometric figuration (from naturalistic or objective representation to geometric interpretation) opens up the range and polarity of the kind of creative thinking that leads to abstraction and its synthesis. This polarity characterises the duality of seeing and knowing, which Klee, in 1933 in *Weg des Naturstufens* (*Ways of nature study*), captured in this passage: "An object expands beyond its semblance, by virtue of our knowledge of its interior constitution — by our knowledge that anything is more than its exterior reveals."

All portfolio and page numbers for the texts and drawings in the present volume relate to the Klee papers. The first figure gives the folder or chapter, the second the page — for example, 17/118a (p.3). The numbering system is the one which Frau Lily Klee applied to the papers after her husband's death. The running text and drawings in *The nature of nature* are not designated separately. Unlike the supplements scattered throughout the papers, they are readily looked up in the original manuscript 9/1–11.

A few illustrative examples have been repeated from the 1900 in Volume 1, where this was necessary to make the context clear. They serve to show that some of Klee's forms have more than one function and validity at more than one level.

To cite a few aspects:

- In planar permeation
- Or spatial transparency.
- In structural articulation,
as a mobile process (function).

Certain notes relate to the textual and pictorial context of Volume 1.

Verbal statements, basic algebraic-mathematical examples from the basic theory, geometric-constructive approaches, demonstrations of form, form-giving and figuration and actual creative work are all shown side by side with the pictorial work proper. This kind of confrontation often shows the striking correspondences and multiple levels of the various media. The arrangement also brings out the equivalence of thought and creative processes, relating Klee's formal ideas directly to his artistic output.

In the "Study of the creative stages of the work", analysis and synthesis often appear as ranges of tension, which supplement rather than mutually exclude each other.

The chronological sequence of lectures and problems does not always conform to the organisation of the subject matter.

The reason is that Klee, in his lectures, included material from the 'Theory of form production' (Volume 1), using it alternately with parts of the 'General system'.

According to whether he was teaching the preliminary course or advanced students, Klee altered his syllabus and redistributed the emphasis given to nature study or formal theory.2 Nine text portions and four problems from the 'General system' lectures are dated. Six general subjects are undated, as are the supplementary notes on nature study and constructive approaches to composition, assembled from the papers found in Klee's literary estate.

A few subjects and two exercises do not fit into the general structure which follows in the main the following basic scheme:

1 linear
2 planar
3 spatial — three-dimensional or the spatial-objective case — (three dimensions)

Second to observance of this basic scheme, the material is structured by organic order and ranking of the subjects.
### Evolution of a theme:

Trees as rendered by Klee from his youth to his maturity

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<th>Contents by main themes</th>
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<td>Elements of structure and articulation</td>
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<td>From the structural element to higher proportions</td>
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<td>The orbit. Composite media</td>
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<td>Individual proportions, related to one another and the whole</td>
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<td>Vivid creation of individual proportion</td>
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<td>Dividual and individual structural elements</td>
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<td>Dividual-individual synthesis</td>
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<td>Structural symbols and articulation elements, linear and planar</td>
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<td>The simplest synthetic order—the chessboard</td>
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<td>Governing proportions as final form</td>
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<td>Form determination and form realisation</td>
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<td>Linear, planar and spatial structures</td>
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<td>Structure and individual as contrasts</td>
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<td>Tripartition of pictorial means</td>
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<td>Theory of tonality</td>
</tr>
</tbody>
</table>

The lecture of 10 November 1923, "Structural symbols and articulation elements, linear and planar, the chessboard" (p.223), has been substantially expanded; and since (with weight and measure) it concerns area, it has been put at the end of "Elements of structure and articulation".

Two exercises were removed from the dated context and placed more logically at the end of appropriate general subjects.

The dates of the lectures have been left unchanged.
Paul Klee was born on 18 December 1879 in Münchenbuchsee near Berne. The earliest drawing reproduced here dates from 1896, when Klee was a 17-year-old student at the Gymnasium (high school) in Berne, from which he graduated in 1898. The Munich studies fell into the years 1899–1901, when he was working with Kriir and Franz von Stuck. He was appointed to the Bauhaus in Weimar in 1923. In 1931 he became a professor at the Düsseldorf State Academy. In 1933 he returned to Berne. Klee died on 29 June 1940 in Muralto-Lucerno.

1896/Estate: From the Edlmau. Pencil drawing from a sketchbook.
1902/Estates: Winter landscape on the River Aare near Bern. Pastel. 16 x 13.

1903/Estates: A group of trees. Oil on cardboard. 34 x 46.

1903/Estates: Untitled (Landscape on the River Aare). In five parts. Oil on canvas. The middle part. Each part 144 x 48.

1904/Estates: Zürich near Beromünster. Oil on canvas. 42 x 34.

1910/Estates: Classic landscape with young trees. Pen and ink on tracing paper. 19 x 51.

1912/Estates: Landscape, yellow house and purple ocean. Pastel on tracing paper. 15 x 15.
Fugio (CA brand). Watercolour with minor as chalk-grounded paper. 48 x 36.5.

Lune. Oil on cardboard on plywood. 83 x 61.

Conway. Coloured pencil on paper. 57 x 48.4.
1920/4: Ape/’tree.
Oil and mixed media on paper, 34 x 45 cm.

1960/6: New growth
Black paste, 27 x 27 cm.
1986/2: Landscape near Plymouth.
Watercolour and pen and ink on Ingres paper.
94 x 69 cm.

1986/20: Botanicalgefähr (Macht these sections).
Coloured pencil and watercolour on paper, 14 x 20 cm.
General system and methodology of pictorial means
Constructive approaches to composition
Movement in the terrestrial realm requires force
Line and plane and their organising forces

Tuesday, 23 October 1923

Draw leaves from nature, taking into account the organising forces of the veins. Combine with an attempt to classify the differing compartmentalisations of the various species. Growth means the progression of matter by new accretions to the static substance. Movement in the terrestrial realm requires force.

Analogies with stroke, line and our other pictorial elements like plane or tone and colour, etc.

[2] Same interior form with outline 9/12b, 9/12b. See Volume 1, p.64.
Primary forces of form production,
form-creating and form-articulating nature
Linear forces and planar form
Part and whole

Monday, 29 October 1923

A leaf is part of the whole. If the tree is an organism, the leaf is an organ. These small parts of the whole are again articulated in themselves. In this articulation, articulate ideas and relations prevail that reflect on a small scale the articulation of the whole.
The articulation of the whole is defined by roots, trunk and crown. The articulation of the crown is defined by branches, twigs, leaves, flowers, fruit. The articulation of a leaf is defined by stem, veins and leaf tissue.
Leaf, stem, and veins belong together, especially stem and central vein, indeed, the central vein may be described as a continuation of the stem. This whole line is thus divided into stem and stem continuation.

The subdivisions of this line are ever different in the different leaves, but even division is certainly rarer than uneven. This division of the main line of leaf stem to central vein, however, is not the only one [a]. In the simplest type, new divisions on the line by the branching of new veins to the left and right, which additionally articulate the central vein or leaf spine.
Note that the line is charged with force especially at the point where it must produce as many branchings as possible, namely at the beginning, close to the stem [b].
Diagonal motion within a parabola at a rate of 1:3 (parabola tree). 16228.

In this way reciprocal relations arise between the articulating intervals and the strength or force of the lines (proportionate measure and proportionate weight). The lateral veins, moreover, undergo their own articulation by measure and weight. The same applies to their further branchings on both sides. The intervals and the dynamic forces dwindle to the point of no return. The tracing eye can no longer distinguish the last ramifications as lines and abandons the pursuit. The particles become confusingly small and are sensed as planar elements rather than linear forces.
Reverting to the main line, we note that the branchings may arise, not at the same points, but alternately on either side, a form of articulation that emphasizes the element of halving the area, though even without it the basic two-dimensional organization is one of halving.

For the left side, points 2 and 4, for the right side, points 1 and 3 are of subsidiary importance. Things are even more complex with leaves that combine the alternating and opposing forms of articulation. Yet this is still a rather primitive basic type.

Another major type departs from the pattern in that initially two of the side veins seek to appropriate the power of the central spine.

In still other types two further veins usually follow suit. These side veins unshark on their mission at an early stage, asserting their autonomy at the very point where leaf joins stem.
Progressive motion, the same motion from bottom to top (from square to oblong), each on blue base). 177116. From Projections 171106-120.
The leaf organ's stem connection with branch and tree as a whole never permits complete co-ordination. Even though the side veins may equal the central vein in size, symmetry is always preserved. In other words, the supremacy of the centre is preserved.

Our concept of the veins as constructive, articulating forces entails thinking of the evolution of a leaf (in the pictorial sense) as an argument between linear force or peculiarity and two-dimensional massiveness or multiplicity.

The planar massiveness is the element that to the eye no longer appears linear, but is distinguished as a separate element by its texture or lines. As against linear definition, this element may create an impression of softness.

This line system reaches into the other element, finely forked or sloppy, and enough of it sticks.

The planar form that arises is thus independent of the imitating linear radiations. And where linear power ends, there arises contour, the limit of planar form.
1963.8 a. Line Or Tree.
Oil on canvas mounted on plywood. 83 x 81.

Growth and modification. 17/18.
Once traced, this limit figure also as a line, but it takes on a new character with the radiant energy of the interior line formations as its element. It is not active, it does nothing. It is passive, it is tolerated.

As a tolerated form, however, it provides reflexes from the aggressive linear forms. As the spokes poke out more sharply, in the maple or plane tree, the angles of the limiting line grow more acute. When this display of energy takes place in more rounded fashion, the contours tend to be quieter [1].

One may envisage this borderline as counteractive (elastic), for when it is exerted particularly sharply, it reverts with the same sharpness. In the special case of the reversions going back to the very point of divergence, we get the composite leaf [2].

Thus we may distinguish an archetype (oval), a transitional form and a composite form [3].
All three radii push the given area measurements beyond the normal limits, and in consequence the material between the radii is no longer sufficient and the borderline becomes deeply scalloped. With particularly strong radiant energy, tears may reach all the way back to the base of the radii.

Tear to the base of the radii

Der Riss bis zur Strahlenbasis
Tuesday, 30 October 1923

Exercise:
Imaginary leaves on the basis of the foregoing basic rules.

Figure 1 figure 9/7 for the exercise set on
Tuesday, 30 October 1923: "Imaginary leaves on the
basis of the foregoing insight into basis rules."
A free-geometric-aesthetic effort.
In place of a single basis for the radii, there are
several.

1990/State Park in a water park
Watercolour on canvas on wood. 10 9 x 85.
The energy centre
The initiated point as latent energy
Motivation for form-creation and articulation
Inner necessity as the basis for form-creation
Structural and articulation elements

Monday, 3 November 1923

So far we have dealt only with the primitive energies of form creation. These are formational and at once articulating.

At the primary level, they were highly economical actions, initial movements communicating themselves to the hand. Their primitive character also arises from their close propinquity to the original formal idea. In this connection, I should like to cite the example of a seed. Despite its primitive smallness, a seed is an energy centre charged to the highest degree. It comprises ineluctable impulses that will give rise to entirely different and highly characteristic forms. One seed will grow into a violet, another into a sunflower— not in the least fortuitously, but by its very nature — the one always a violet, the other always a sunflower. (So reliable is this that seeds may be sorted, packed, labelled and marketed.) Each seed is the spin-off of a certain species and a talisman for the regeneration of that species.
1966/38; drawn with.
Coloured paste on newspaper. 53 x 40 cm.

1966/38: Deer in the woods.
Watercolour and stipulation on oil-grounded
canvas, 53 x 43 cm.
Finely nett and bold motifs, dynamically accented in
keeping with the style of Elia's late work.
A certain impetus from without, the relation to earth and atmosphere, begot the capacity to grow. The slumbering tendency towards form and articulation awakens in predetermined precision, determined with reference to the underlying idea, to the logos, or, as the translation runs, the word, which was in the beginning. The word as a promise, as the idea required for the genesis of a work. In abstract terms, what we have here is the ignited point as latent energy.

At the slightest impetus, the point is about to emerge from a state in which its mobility was concealed, to move onwards, to take on one or more directions. It is about to become linear.

In concrete pictorial terms: The seed strikes root, initially the line is directed earthwards, though not to dwell there, only to draw energy thence for reaching up into the air. The next effect of contact with the soil is that the seed rises, and this is often followed by a kind of split (dicotyledonous). This division becomes the beginning of further upward motion. The spirit of this form-creation is linear.

1 Dicotyledonous plants with two seed leaves, a major division of the angiosperms. In the germination phase these plants have two or more seed leaves.
In order to spread and gain power over large areas of space, the linear unit branches. In order to irrigate, the stream divides. The dynamic force is space hunger — space hunger as juice hunger underneath the ground, space hunger as air and light hunger in the atmosphere [1].

Extensions in the air space and within the soil are interdependent, just as in developed organisms the functions of nutrition and respiration are interdependent. A broader nutritional base may give rise to large respiratory organs, while greater breathing-space may enlarge the nutritional organs (mutuality, reciprocity) [2].

Competition with other creatures, or the struggle for existence, to use a more dramatic term, provides the impulse for the enhancement of energy production. As far as light requirements are concerned, altitude plays a certain role [3]. The point of origin between soil and atmosphere stretches out, and the generalised plant image becomes tree, root, trunk, crown. The trunk is the medium for the raising of the sap from the soil to the lofty crown.
The linear forces gather within it to form a powerful stream, and they radiate outwards, in order to pervade the air space at free height. Henceforward articulation naturally becomes more and more ramified and open, to make the best of air and light. Leaves become flat lobes, the whole thing begins to resemble a lung or gills, porous, subdivided, for a single purpose.

Let this entire organism now become an example to us—a structure functioning from within to without or vice versa.

Let us learn: The whole form results from a single base, the base of inner necessity. Need is at the bottom.

There is no random toy ing with results. The active path towards form and inner structure is ineluctable. Considering the articulation on its own and recalling the leaf, we can observe successive changes in the character of articulation, as we move from the main limb to the side limbs. Beginning with the element of singularity we arrive at the character of plurality.

In terms of form production, the line between linear and two-dimensional elements must lie somewhere. In terms of form articulation the line between singular articulation and mass articulation must lie somewhere.
It is less important to localise this precisely than to regard the two elements as being in contrast, e.g., the singular as moving forwards, the masslike as moving backwards.

The disparity between the two then leaps to the eye. The mass element I should like to call structural character. The articulated aspect of mass should be envisaged as the massive repetition of values that are of a similar order of smallness.

Linear gezeigt —

oder so

oder nach quer, lichtung, gegenöst so

als käfig

beide dimensionen meint und in zellen ausgeführt

11111111
11111111
11111111
11111111
11111111
Tuesday, 8 November 1923

Drawing apples,
- longitudinal section
- cross-section
- spatial-three-dimensional drawing.

The apple [from blossom to fruit ("capula")].
Along the whole line of development that leads to the fruit, longitudinal cuts constitute typically static images and cross cuts typically dynamic; but once we get to the fruit itself, the static aspect vanishes. All cuts become dynamic. 46/66.

[Diagrams showing spatial changes in apple development.]
1904.5.1: Suffering fruit.
Watercolour, oil and pencil. 30 x 44-5.

Cross-section and longitudinal section of a fruit

Union of norm and of movement away from the norm
Progressively waxing and waxing side movement (with the centre shifted)
Progressive increase: 1 1 5 2 3 4 5 decrease — 4 3
Former centros (between 2 and 3) now here (between 3 and 4). 17/114.

Lines for the cut fruit.
1777a.
What I saw by way of your theoretical exercises in the field of structures was not very rewarding, in terms of spontaneity. A certain trend towards rigidity predominated, often resulting in chillingly symmetrical ornamentation. I think that is a slippery area, and for the time being, should still like to discourage you from entering it; for initially it is hard to retain life in such abstractions. One tends to ignore altogether the bridge that leads from natural and inherently coherent rhythm to its precise representation.

The ultimate flowering of ornament is precisely such an end, arising on the basis of what is supposed to have happened, which one should not tackle directly, in my searching view of form-production. Instead, it is an end one should allow to grow, like the natural process, as the result of form-determining activities. How live it is the act of forming rather than form itself, form in the process of growth, as genesis, rather than as the ultimate appearance.
We are the bow, we represent the expressive impulse, mediated by the substance, with the sand figures as the final formal result. The main context embraces the bow (vibrations) and the physical material. It is as though matter were being fertilised and became invested under this dictate with a kind of life of its own. The sand is the annexe, the outer layer, the secondary stratum.

To revert once more to structures and avoid the lifeless in advance, I should like to choose as the symbol of structure

In place of

rather the wavy line.
To revert once more to structures and even here avoid the lifeless,

I should therefore like to establish this wave structure as the symbol of minutely divided animation. If matter is to be swept up into it, however, it must be suitable, in which event it will swing into action at full force.

The suitability of matter for a given purpose consists in its particles being amenable to movement. Function resides in movement itself. For us, who build neither clocks nor robots, the material emphasis falls on mobility; but to build tiny shelters for movement, we must in turn proceed from movement itself, from the need for such shelter.

Rigid guideline through matter

Mobile guideline through matter

Movement potential

predicates a certain scope

for the guideline

No such scope

Scope for movement
Well, now, how is matter to be swept up into this first expression of life? The question of the causal arises.

In the case of a highly porous and loose material like sea sand, one can observe with great clarity how this process takes place. The water, carrying itself and forms waves of smaller and larger size. The water flowing out with the tide leaves its signature with striking subtlety and decision, in its whole context of 'streaming'. One observes both linear and plastic formations that are the very essence of streaming.

In such a case, one can envisage guidelines for the attack on matter. Yet it need not be as sharp as all that. It may be matter in growth, burgeoning, adapting itself, little on little, to a living idea, taking shape after it while still soft and impressionable.

This disposition, the fitness of matter, consists in a propensity for motion of its particles. These particles adapt themselves to the guidelines of the living attack and form themselves into small structures that may be described as channels, pipelets.

In this way: first life, then the shelter for it — that is the way it happens even on the minuscule scale. Early adaptive union of idea and matter yields matter animale. At this moment, the originally straight line of attack changes into a slightly oscillating, vibrating wave line. The attendant friction is overcome by a first flickering rhythmisation.

A line needs scope in which to move, because it has been swept up into movement.
Each form of matter permits itself to be permeated in the sense of such leeway for movement, though not always in a way we can perceive.

Let us assume that wave motion is minute and even smaller, it will still be there, but only imperceptibly so.

A musical tone is in itself already a wave motion, but one that cannot be perceived. Only an added vibration renders it perceptible. Every form of matter permits this leeway, but not every form allows us to perceive it.

The remedy is to transmit the movement to somewhat larger, perceptible dimensions.

Perhaps you have noted how the tone of a singer or string player quakes or vibrates or turns on a tremolo, it is the same thing. Every sound is already a vibration of the material air, so subtle that on its own it can be perceived only as a higher or lower tone. Such melodic music-making would be sensed as intimate. It is precisely the vibrato that affords this chilly impression.
A particle, in other words, must be shaped in such a way as to lend itself to movement and conduction. For particles have no separate existence, merely serving in support of larger functions. They mediate—they are the middle links that receive and transmit.

A particle subserves some higher process that is capable of further development. It is a building-brick in a higher order which it transmits in several directions, over into three dimensions.

In the matter of plants: On one occasion, for example, I managed to root a slip in the following manner:

The original plant A had two branches, a and b. When it had reached stage B, I bent branch b down into the soil, where I secured it in the middle. After a lapse of time sufficient for rooting, I cut branch b close to branch a (stage C), thus gaining a separate new plant with the branches b1 and b2. At stage D, these two branches are shown having grown further, b2 in the original direction, b1 in the one opposite. I conclude that the appropriate structures must adapt themselves to these two directions, so that the sap may flow both up and down.
Sap rises and falls in a plant.

Such structural elements (tubelets) are capable of being used for movement both up and down. They receive and transmit in either direction. Water flows uphill only in certain circumstances. Among these is the state of being divided into tiny particles - the capillary system.
What would be the shape of a tubelet capable of receiving and transmitting in only one direction?

Function

Shell for the function

Function is here conceivable in only one direction, for if it were reversed there would be scattering and no useful transmission would take place.
Sheel for this type of function are shaped rather like fish traps or lobster pots.1

Demonstration: in fish traps or lobster pots

We can see how movement in such devices is channelled in the natural directions, fish passing through successive openings from compartment to compartment.

Fishes moving in the opposite direction will invariably miss the opening and get stuck, while others will move in.

The likelihood of making progress is smaller than that of getting stuck.
A page of sketches from the Theory of form production, styles: simple and composite structural movements.
(1) and (2): Interrupted flow.
(3): Growth.

By repeating or combining channels that transmit in one direction or the other, or in both, we leave the area of the linear for the planar, whence we ultimately reach three-dimensional space.

a. Repetition
b. Combination: up, down, up, down

Shift towards denser two- or three-dimensionality

And now all manner of structural rhythms may once again work together, greatly enhancing variability—though managed only in this sense: No dead little cells must be strung together. The minor living functions must first be given room and shape, the tiny shells being built around them only subsequently.

As in an apple or a snail shell.
This much as an attempt at stimulation for more vivid figuration.
Creative power is ineffable. It remains ultimately mysterious. And every mystery affects us deeply. We are ourselves charged with this power, down to our subtlest parts. We may not be able to alter its essence, but we can move towards its source, insofar as all possible. In any event, it is up to us to manifest this power in its functions, just as it becomes manifest within ourselves.

In all likelihood, it is itself a form of matter, although it cannot be perceived with the same senses as the more familiar kinds of matter. Yet it is in those familiar kinds that it must reveal itself. It must function in union with matter. Permeated with matter, it must take on living, actual form. It is thence that matter derives its life, acquiring order from its innumerable particles and most subordinate rhythms all the way to its higher articulations.

From one of Klee's series on nature study:

**Dynamics of force are linked (essentially), limits are outward (inward). Core, interior space, rotated and exterior space, external.**

Dynamic form-initiated form. Additionally, the abstract active—passive. Fused—modulated.

**Synthesis of form and related rhythms.** The initiated form of the core layer is form. The structural elements are loosen and even fleeting than the surrounding layer.
In 'Concepts of a Theory of Ideal Matter', Volume 1, pp.135-136, the organ is presented as a cell-like structure, forming and expanding as organic life begins. The nature of each form of movement and the organic connection between these forms must be present as pre-existing, first through the very form of the organs, and again by the emphasis given these forms in their representation. This is demonstrated by the example of plant form.

In 1902, L鸽pelmann and others realized the significance of the ideal materialist in the field of science and metaphysics. The growth processes from leaf to flower, synthetically and analytically, was a point of view, from the flowering of the plant to the inorganic and mineral realm.

"Let the active force be the self in which the seed opens. The complex cell, used, nourishment, growth, roots, which produces the form is.

The living into the light and open air, the breathing organs form one as the two being, and form more leaves and more leaves.

Result, the forest. This plant is full green."
There is resonance inside the particles, immanent within them. Their oscillations range
from the very simplest to complex modes. Inexorable law must express itself throughout.
The bow can have no pity. Every expression of function must be cogently justified.
Only then will that which is in the beginning, that which mediates and that which is at the
end, belong together intimately. And nowhere will the dubious be able to obtrude, for
every part fits indubitably into the next.
Only in this way can it be done. One must not leap in at random, least of all at the tail end.
One must get in at the ground floor. That alone will avoid rigidity, and the entire growth
process will then function without interruption.

Wherever there are gaps or crude hairs, however, nonsense always emerges as such, in
various guises. Dead forms, crevices, ruts, moans, breaks, monotonies.
Or, when not quite so bad: Infertility, barrenness, pseudo existence, casual false-fronts,
belonging to nothing. Things without growth. Eyes without function. Unnaturalness, sur-
passingly fair. Aestheticism, Formalism.
Whatever rests on the foundations of life, on the other hand, is good, when new formation
and preservation each find themselves in the other.

Let us, therefore, think not of form but of the act of forming. Let us stick to the path, to the
unbroken connection with idealized subatomicity. Let us hence cogently lead the shaping
tendency further, until it permeates parts and particles. Let us step by step translate
this tendency from the small to the larger, advance towards the realization of the whole,
retain creative leadership, never allow the creative reins to drop from our hands.
From structural character to higher proportions
Higher proportions of changeable structural character
Comparative movement
Forming a higher articulation, linear and planar
Circulation as a finite temporal process
Relativity of articulate elements
The circulation of the blood as an example of figuration
Composite events with composite means

4 December 1923

1. Course of movement in simple, composite structures, 1922.
2. Composite course of movement as an example of the next higher formation.
   From Rilke's calendar, 1907/08.

1883/84. Southern road.
Watercolour. 27 x 37.

Alternation of fine articulation and broken structures, 'newly adapted to the general character in the various parts, adapted more or less, interrupted when the context demands it, only to be resumed once again'.

"Obese: with "paleness, back", replaced by Fornaci."
River course: Let us first take a very simple example from nature of a higher proportion with changeable structural elements. Water from the hills gathers in rivulets that join and flow on gently. The valley has itself taken on gentle form (stemming from the history of its development, which must be considered in all treatment of form). Its gradient in turn forms a slightly wavering water course moving at moderate speed.

These parameters of moderate form and movement change abruptly and unexpectedly. At the deep end of the upper and more moderate valley comes a sudden ravine, through which the water hurtles in a steeply descending course.
A small intermediate section forms a connecting link between the earlier calm phase and the new one with its agitated movement to and fro in all directions. The waters now set more and more deeply into the rugged riverbed, undermining the banks, until whole sections collapse, increasing the difficulties and whipping up an aggressive fury.

The earlier gliding pressure that parted merely into ripples, now gives way to angry sweep and momentum.

This continues for quite a while, until the section gradually calms down along its course. This second intermediate section leads into a third part, a second one of calmness, which continues for a while into the horizontal extension of a broad isle, where it more and more evades perception.
Widest contrast span, 1-3a in major extent, 4 as minor intensity, 60/04.

The water course
1. aggregation
2. quiet course
3. unquiet course
4. mouth

Capacity of formation [2]:
Curve of a level contour related to the concept:
1. major contrast, direct, or
2. indirect
3.Its minor contrast, i.e., the concept
4. as minor intensity [2/4].

Major contrasts juxtaposed provide vigorous expression. Indirect major contrasts spread out and soften the vigor of expression. Big leaps may have higher energy than small leaps. Minor contrasts, even when represented direct, also soften the vigor of expression. When indirectly represented, they suffer by enrichment and relaxation of tension. [1]

Water course [2]. By expanding the conceptual field, I create a higher whole that may be perceived. I set new and further limits to representation, or I diminish what is represented within the old limits. IV/188.
Seen as a whole, what we have before us is a proportion of higher order, resulting from the mutual relation of three parts.

In the middle is that fiercely agitated main part, the Schöllenen gorge.

At the outset, the gentle part, up in the Ureneren valley.

They have a brief stretch in common, the slight transition to the loop from I to II.

At the end comes the second calmer stretch, the lower Ross valley, while the shared region of gradual calming mediates between II and III.

The initial part is preceded and introduced by a process of aggregation.

Variant of the passage; partially crossed out.

"...and at the end, as a concluding note, the lake port, where the end of movement takes place."
Well, how does such an articulation work? The parts and intermediate parts interlock mutually and with the whole. They differ in the character of their structure and, according to the way the emphasis is placed, in their extent.

I has a definite relation to II, III to III, and III in turn to I, each in characteristic fashion. As for character of structure, I and III are more open, by virtue of more limited movement, while II should be held at a rather denser level, because in II movement coincides with counter movement.

Further comparisons that may be made:

\[ \begin{align*}
\text{I with II and III} \\
\text{II with I and III} \\
\text{III with I and II}
\end{align*} \]

\[ \text{I with the whole} \]

\[ \text{I with II and II and III} \]

\[ \text{II with I and II and III} \]

\[ \text{III with I and II and III} \]

Such comparison of movement constitutes the essence of proportional action. It is the way such proportions function. At the same time, we should not allow ourselves to be confused by the fact that an element of extension is not precisely commensurate with an element of concentration. We are not face to face with mathematics here. Nor is it a matter of fathoming measures or weighabilities. We are concerned with comparing the impressions made by the various parts, and it is precisely the difference between at least two parts on which a higher proportion hinges. You will often find, for example, that parallels are no longer parallel, when some third element intervenes and interferes (optical illusion as reality).
Act of forming (composition). The given scheme is by no means obligatory.
A living representation may be realized in more than one way. Let me give but a few hints in this connection.

Linear

or planar

1 In his later work, the conventional contrast between rigid guideline and capacity for movement (the normal and the departure from the normal) is emphasized beyond the structural level to such a degree that the herself becomes individualized. The contrast of "who ours versus the individual" is largely eliminated, due to its treatment as unity.

Cf. example of formation 40334, p. 15, and the contrast between rigid, decisive and capacity for movement. p. 47 also 1021/UE II: Movement in Hicks, p. 48.
The challenge is to project something of rather long linear extension on to a modest area limited on all sides. A temporal art like music or poetry could meet this challenge without any difficulty. In the most natural way—precisely the way of a temporal sequence. Yet there is an analogy in both these arts, notation on the printed page or music sheet. On both such pages the eye brushes past line after line. No one can keep us from insisting that this temporal reading of a kind of pictorial writing be applied to our plane as well. Even if we wish to avoid the leap of the eye from the end of one line to the beginning of the next, that may be managed quite well.

A spatial approach might make the natural mode of representation take on the form of a spiral movement from top to bottom.
To p. 12: 'The point of contact of each circle with the next smaller one varies in three directions.' 1975.
From: Progressions (Progressionenverhältnisse), 1959-62.

Constructive formation example 1975: progression with directional shifts, may be viewed as a two-dimensional scheme for the watercolour 1985 in fig. A.19, p. 62. This watercolour represents a three-dimensional rendering. The 'objective/spatial case' with free progression relations.
Projected to a plane, loops may be avoided by resort to a zigzag line, purest projection of a spiral, taking above and below into account. In this way the movement of the reading eye remains uninterrupted by leaps and unencumbered by cusps.

Articulation too may then be expressed more freely in the course of the line. The living evolution from one structural section to the next should be appropriately expressed at the turning points, allowing the limbs to remain distinct, one from the other, by their varying slope on the one hand, and by the alternation in structural treatment on the other. Higher articulation is expressed by the degree of directional change (steeper or less steep), while lower articulation is expressed through structural alternation.
Progression of a zigzag line. 17/71.
From: Progressions 17/97-128.

Zigzag progression of the sides of a series of right-angled triangles (darker lines)
Zigzag progression of the hypotenuses (lighter lines) 17/72.

\[ x = \sqrt{1+2} = \sqrt{3} \]
\[ x = \sqrt{2+4} = \sqrt{6} \]
\[ x = \sqrt{4+8} = \sqrt{12} \]
\[ x = \sqrt{7} \] = between 4 and 5
\[ x = \sqrt{9} = \text{almost 3} \]
\[ x = \sqrt{2} = \text{almost 1.4} \]

\[ a + (a+1) + (a+2) + (a+3) + (a+4) + (a+5) + (a+6) \]
\[ 1 + 2 + 3 + 4 + 5 + 6 + 7 \]
There is still another mode of representing water flow. In nature, after all, the water does not necessarily end in a lake. Neither in a lake nor in the sea, and the springs in the mountains too must be fed from somewhere. Our epic, in other words, has neither beginning nor end.

This can be remedied by inserting a connective. But to connect 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 guide my curve upwards and complete the circle in the clouds.

This tempt me into the following two representations:

a. Oblong as a sign of rotation, turn of the horizontal-vertical symbol:

b. To
b. Circles as signs of distinction between 'above the horizon' and 'below the horizon' and as an expression of gravitation, the plumbline dimension [2].

1. This symbol:

2. Liquid down from the sky gasous up to the sky,

3. The water cycle. IV/188. 'Water descends from the sky as rain and rises to the sky as vapor, hence I guide the car on upwards and close the circle in the clouds.'

4. Ordinary circulation. IV/188. Gasous and solid (in continuous representation.)
When one ultimately chooses a rather lofty, remote vantage point, saying to oneself that this is the way water moves, year in, year out, between earth and atmosphere, one degrades the higher articulation once again to the structural level. And when one moves to such a distance that it appears microscopic, one then speaks of chemistry, of the magnetic or spiritual, which are not properly known still to be matter.

Lastly, a word about the relativity of articulate elements. The greater the rise of the vantage point chosen, the higher and farther away is the viewing eye, and the smaller must the units ultimately appear, even though closer up they still looked quite important, investing the articulations in point with a wholly individual aspect.

Not to be overlooked in all this is that in return new individual divisions would emerge in an orderly fashion.
Let us say that we should ultimately view the earth as a round disc, divided into land and water as on a map. At a still greater distance, it would look like a spherical disc with a satellite. In temporal terms, too, one would see the sphere rapidly rotating each day, while the moonlet would circle it at a monthly rate. This would be a macroscopic effect: localised temporal structures, structural degradation, but also the creation of new individuals, as in the structural crop of the stars, the special aspects of the Milky Way and of the constellations.

Conversely, microscopy leads us into areas where elements hitherto perceived as structures would gain a thoroughly individual aspect, and an atomic-structural rhythm might be discovered from the ultimate molecular traces that were still perceptible.

Rhythmic sequence of the seasons: spring, summer, autumn, winter. [Diagram]
Creation is thus in both directions an infinite, complex, intricate construction. In the course of time, wide areas have opened up on both sides to man's grasp and perception; but man has been unable to transcend certain limits and will never be able to do so. It is a good thing that in the course of time it has been possible to achieve at least a certain elasticity of these limits.

The relativity of things characterised by articulation has thus been acknowledged, and this protects us against the danger of futility in our approach. In the creative process, however, this relativity should be eliminated by setting firm limits to the scope for movement.

Full moon phase, twelve times a year, monthly rhythm. IV/25a.

Rhythm based on the premise of a very long period of time, possibly eternity. IV/40.
We carry a circulatory system of similar nature within us, without being aware of it. This is the circulation of the blood. Here we are able to view directly a circulation model from nature within its local limits.

The movement of this substance (liquid) does not depend on differences in altitude and phase, but on a central motor, the myocardiun, built into us. This motor dictates the movement of the fluid channelled in tubes and tubeslets (veins). It does so by means of a rhythmically repeated movement of contraction and relaxation, of tension and relief, which it controls in its alternating expansive and attractive cycles.

Physiologische Analyse der Blutkreislauf

*Physiological analysis of the circulation of the blood. Pencil fluid. 1940.
Das Herz pumpet (motor)

II Das Blut fließt durch die Lungen, wird dort (passiv)

II Das Herz pasiv wieder den Herzen zu

I Das Herz pumpet wieder (motor)

II Das Blut wird wieder in Bewegung gesetzt und

II Keist zur Stelle des Herzens zurück, von wo der Kreislauf anging (passiv)

Blood is propelled in such a way as to pervade the entire organism, to flow through the whole body. To this end, more and more side streams branch off, until we can perceive a complete network of such branchings, providing thorough perfusion. In the very flest branchings, movement proceeds of its own accord, as always in capillary tubes.

A state is attained in which movement is mediated. In addition, blood deteriorates by surrendering its useful components. In other words, blood of good quality is propelled and after losing that quality is collected and returned to the heart.
This is always done on command of this motor centre.

No part of the volume has been lost, only the good quality. In place of one simple cycle, this requires a further circulatory system.

And now the bad blood is propelled into a new direction, to reach another place and activity. It reaches the lungs, where it is purified and where another intermediate stage is attained, in the sense of differential movement.

Ultimately it is collected for a second time, so that the heart is able to bring it back effectively.
Mediating forms on a purely elemental-schematic basis.
Precisely mediating results between primary forms. 44/1-66.
Example of forming 44/33:
Ray control is eccentrically located.
Mediating forms with eccentric activity.
Ray centre displaced into a corner.
In the square A B C D:
The heart form as mediating form between circle and rectangle
(irradiated from the opposing corner point A).

Norm: Central Irradiation.
Hence, in the above case, radiation from a corner point follows the composite mode.
Or radiation could take place from all corners.

The form described in this way is a figure eight, a dual circulatory system or a double-circle connected by a cross.

At the point of the crossover, the central organ of movement finds its appropriate place, whence it may control both parts of the circulation. On the opposite sides, processes of a special nature take place, on the right the surrender of positive qualities, the blood volume being subdivided into smaller and smaller parts, for proper exploitation.

Following such exploitation, it is collected once again for the purpose of the swiftest possible subjugation by the central organ.

On the left is the scene of reception of positive quality, to which end the blood must once again be spread out widely.
Thus does nature act and shape, on the basis of her need of movement, both in terms of locale and content.

I have kept my discourse quite elementary, limiting myself to the merest hints. This afternoon, when you will be asked to represent such a circulatory system, you will have to go rather beyond the schema shown here on the blackboard.

A composite event may be brought alive more easily by composite media. In a pinch, one might represent the

good blood by a cross like this X
and the bad like this X

106

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Circulation of the blood, IV/38b.

Top: D = Degeneration, R = Regeneration.
Bottom: R = Regeneration, D = Degeneration.
(in continuous representation).

By using two colours, e.g. by colour representation, the thing could be done much more graphically. And what happens on the two wings, to the left and right, almost certainly appertains to the realm of colour.

What does this representation denote?

A playful game of spreading out and foregathering again, without deeper meaning. But when it is resolved in colour, the triviality is at once remedied.

Well, we know the purpose of the spreading out. To subject it to alternations, to utilise the red phase. When the colour is continued into the centre, the cross gains meaning.
Exercise for the afternoon: Simple higher articulation combined with structure.

These qualitative or coloured representations would be opposed by the motor centre, demanding other means. The activity of a muscle consists of the alternation of contraction and relaxation, expansion and concentration.

Degeneration

Regeneration

This belongs in the realm of weight, these are movements from light to dark. One colour does not yet suggest a colour problem, but a trend like red, redder, very red suggests that this is an analogue of black-and-white tonality.

1 Measure, weight, quality = line, tonality, colour.

Cf p. 296.

(I shall discuss proportion, measure, weight, quality on another occasion.)

110
Ways of nature study: constructive approaches to composition

Energies of form-creating nature
Objects in nature investigated in regard to their inner being
Natural growth and progressive layer sequence
Stratification applied genetically
Temporally growing
Centrally irradiated growth
One- and two-dimensional square movement
Synthesis of cross-sectional and longitudinal plant growth
Dimension and weight and their movement
Approach, essence, semblance
Synthesis of figuration and appearance

From a single source (seed) paths spread out, with a display of influences (from within or without). 9/10.

Essential flower data (the process of blooming). Approach to an open cross-section of a flower. 9/16.

The means as such, arranged in a state of rest. Even here an interior.
Objects in nature investigated in regard to their inner being (the concept of ab ovo). 8/4.
Natural growth. 12/116.
Natural growth and progressive layer sequence. 17/172.
Stratification applied genetically. Temporal sequence. 18/148.
Temporally growing. (Leaves) 23/23.
Centrally irradiated growth. 39/1.
Emergent growth, productive line growth, one- and two-dimensional.
Multidimensional movement on a square base or differential movement as "distance and angular" movement.
Longitudinal or male movement, cross-sectional or female movement. 39/116.
Dagi-and two-dimensional square movement on a picturesque base. 98/115.
Movement: two-dimensional and double-directed progressions. Extension and contraction. 17/104a.
Measures and weight and their movement:
Expansion-imposition, reification-condensation. 42/9.
Movement of the square from normal to abnormal. 17/106.
Motion sequence (genetic) from within to without. Series of squares represented spatially. 17/106.
Augmentation modes: shift, rotation, reflection. An example of complementary reversal. 60/71.

Approach, essence, resemblance.

Essence contrasted with semblance.
Interior-exterior. 6/7.

Representation by essence and by appearance.
Seed. From a single source (a seed) paths spread out, with a display of influences (from within and without) I-IV.

The point stirs into motion and an essential structure grows, resting on figuration. The end is but part of the essence (the semblance). The true essential figure is a synthesis of figuration and semblance. 8/10.
Transparency-opaque cross,
Transparenst media,
e.g. green and blue.
To the fore, bright intensive red.
Formation example 60/13.

Essential flower data (the process of blooming).
Approach to an open cross-section of a flower.
Itself a living cross-section, a blossom opens up natural insight into the cross-sectional plane. The special solemnity of the generative process (release of positive-negative tension, synthesis of dual components) finds special expression in colour specificity.
45/16.

How to achieve representation, e.g. emphasis on the processes leading to form, Representation by essences, e.g. penetration (contrast by appearance). Or representation of the objective-objective aspect.
'True essential figures in a synthesis of figuration and suminiae.'
An organ is maintained with regard to its inner being. Its dynamic character being emphasized. Interior and exterior interpenetrate and are seen in cross-section (core layer, interior-exterior).
Destructive forces push from the outside in. The linear being is transparent and ascended in colour (progressive in relation to life, regressive in reference to death).
The means as such, arranged in a state of rest. Even here an interior.

2. Objects in nature investigated in regard to their inner being (the concept of ab ovo).

3. The basic concept of growth, tension or charge.

4. How form comes into being, ways to form, even to basic forms. Then to eliminations of the basic forms (together) against one another. Special case: The basic forms in a state of rest, arranged by their inner being (together or within one another).

4. Relation of form to space (ground area). Core, interior space, objective shell, exterior space.
Organisation of the whole picture (pictorial whole), elements of articulation and their evaluation.

Planes:
- Rhythmic - suprahysthetic
- Divisional - individual.

6 How to achieve representation:
E.g. emphasis on the processes leading to form. Representation by essence, e.g. permeation (contrast by semblance).

Or representation of the objective - spatial aspect.

7 Construction in detail and as a whole as composition, i.e. the relations of the pictorial components to one another and to the whole (ground plane).

Questions of style, whether the representation is by essence or semblance. In turn, impression nuances within the preferential and essential.

9 Compositional planner and inherent being:
   a) Static compulsion
   b) Liberation therefrom
   c) Dynamic - cosmic compulsion.

Offered as a retrospect in March 1975, 8/4 and 8/4a.

Natural growth and progressive layer sequence. (Appendix to Progressions.) 17/17.
Stratification applied genetically:

Circles grow more and more in breadth around points 1, 2, 3, 4, in the temporal sequence:
1a 1b 2a 2b 3a 3b 4a 4b
1c 2c etc.

Where one is already in the way, the other must respect it.

Two relations are crucial:

a. The sequence of points
b. Their nearness or distance.

169/66

Stratification applied genetically:

Circles 1a, 1b, 2a, 2b, 3a, 3b, etc., grow temporarily separate in interlocking arrangement.

The temporal order indicates the sequence of the growth process.

The temporally separate processes are superimposed in a simultaneous multidimensional figuration example (multidimensional contacts).

Cf. p. 168 "Temporally growing circles." In this further example the temporal sequence is physically emphasized more strongly, in contrast to the end result in genetic stratification.

* I.e., arranged by origin and growth.
Plants bring to the fore the reality and subtlety of essential elements are comprehended within a spatial unit as temporally separate processes          /temporal-processes, multidimensional simultaneity/.
The circular simplifications are arranged by growth, i.e. genetically.
Cf. 'Bioclimatization applied genetically' p.135.

"Temporally growing (leaves), 21/22."

Paired and upright connection of regular and parabolic horizontals. 16/27.

Regular horizontal and parabolic point 'zero'
Parabolic horizontal 'one'
Parabolic horizontal 'two'

Regular horizontal 'one'
Regular horizontal 'two'

Centrally irradiated growth

Growth takes place, as though it were a matter of dimension, on all sides, evenly. Growth takes place in relation to the earlier whole. Note: self-explanatory.

Ever again square (stratified form), only larger or smaller.
Measure productively uncharacteristic.
Ever again circle, only larger or smaller.
Ever again triangle, only larger or smaller, etc.
(And?) ever again the same interior construction.

Non-characteristic form movement (primary movements). 3b/1–3.
From the section: Secondary elements on the basis of the square. 3b/1–146.

Coincident regular and parabolic horizontal X, 'ten'
X 9 8 7 6 5 4 3 2 1 0 1 2 3

Cf. pp. 137 and 140.
Parabolic triangular movement (parabola based on an oblong 1:3).
16/219.
Parabola: the intersection of a cone with a plane parallel to its side.
Mechanically definable as a tensile (executive) process between a moving point on the one hand and a fixed point and a fixed line (straight line) on the other. 16/216-240.

Multidimensional movements on a square base or differential movements as 'extension' and angle movements. 38/116.

In longitudinal section or moving in the male mode (over-extended)
In longitudinal section or moving in the male mode (under-extended)
Cross-sectional or moving in the female mode (over-extended)

Cross-sectional or moving in the female mode (under-extended)
Intermediate case
Recognition of the direction of movement is based on the basic measure of the square

The effects of these movement modes are characteristic as effects or phenomena only in over-extended or under-extended movement.

The 'multidimensional' element - consists of this combination of movements

These movements may also be called tensions related to the triangle
Extension upwards and foreshortening upwards (the parts 'above-below' are uniformly enlarged, and the parts 'left-right' diminish upwards more and more). 17/40

From: Formal movement.
Abnormal changes in basic form (pathology). 17/36-42.
Synthesis of cross-sectional and longitudinal plant growth, 38/60a and 38/91. Area crosses in the characteristic diagonal growth of a small square.

In plants:
Partial-cross-sectionally growing

Growing in longitudinal section

Longitudinal plant growth:
Longitudinal growth is partial (quotient) and centripetally directed, moreover. Possibly to be called 'female'.
Cross-sectional growth is complete and directed centrifugally, moreover. Possibly to be called 'male'.
Synthesis of cross-sectional and longitudinal plant growth.

Text: 38/64.

"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. Man decomposes the thing and visualizes 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 female knife, to some extent helped by finer instruments which make the material structure of material function clear to us." From 'Ways of Nature Study' (1903), For the complete text of Volume 1, p.63-65.
Unidimensional square movement on a pictorial basis. 39/115

Square

Movements:
Two-dimensional and double-directed progressions. 17/10Ms.

Over-extended, male positive
Under-extended, male negative

25 units above-below
25 units left-right

The same, two-dimensionally

Essential process:
Extension dilutes energy.
Conversely, contraction enhances energy.
Movement of the square from normal to abnormal. 17/48.

Outwardly pseudo abnormal

Outwardly pseudo abnormal

Progressive movement normal

Inwardly abnormal

From square to oblong in even movement. 17/48.

Arrested ?

Moves evenly — (in mirror writing).

From the section:

Strain.

Formal movement.

Unidimensional movement.

Two-dimensional movement (uneven movement, e.g. over-extension and foreshortening.

Abnormal interior construction. 17/43-48.

139
Dimension and weight and their movements. 42/1a.

As dimensional change
Expansion Implosion
Broadening Narrowing

As weight change
Rarefaction Condensation
Extension Contraction

Equal dimension
1 white
2 lightest grey
3 light grey
4 grey
5 dark grey
6 darkest grey
7 black

Unequal dimension

Equal weight at equal dimension

Unequal weight at unequal dimension

Assuming a square as the starting point, the conclusion is that a progressive wrench has taken place, pushing out more and more the oblongs that were originally of the same size.

When the whole, field by field, consisted of the same amount of pigment, the pigment wanes when the dimensions increase. When they decrease, the pigment wanes.

For example black pigment has the most marked effect against a contrasting base of white.
Largely fields; then, are pigment-poor, small ones pigment-rich. The analogous process in terms of the mutuality of measure (or 'dimension') and density (or 'weight') may be expressed in the principle: small fields become denser, large fields more rarified. Interaction of dimension and weight in parallel or in the same direction underlines, emphasises and reinforces any dimensional change. Oppositely directed interaction of dimension and weight impedes, cancels or reverses dimensional change by a counter-trend of density, according to the degree of energy applied.

The rule is: extension or contraction of tonality combined with dimensional change, results in enlargement or reduction of area content.

There is no absolute commitment to one direction along the tonality range.

White base: extension is towards black and controls brightening.

Black base: contraction towards white controls darkening, i.e. on a black polar base.

Conversely: extension towards white controls darkening.

Divergence means tonality change in the sense of extension or contraction without corresponding dimensional change (dimensions fixed).

New concentration towards a corner is a partial matter, a 'quotient' applying to only one quarter. Completion towards 4/4 harmony is readily accomplished; obviously in this process the narrowest strip is doubled without again becoming extended.

The congruence of measure and weight should be thought of in such a way as to allow greatest density within smallest area. Large areas thin out density, lighten weight relating to the same area, for which they compensate by changed area dimensions. Equilibrium prevails.

This equilibrium comes about because lighter weights correspond to higher area figures; but by way of compensation, there is more light-weight material than heavy.

Theorem:

Weight is the degree of density of medium contrast.

On a white base the enhancement marches in the direction of black.

On a black base the enhancement marches in the direction of white.

On a colourless base the enhancement marches in the direction of colour.
Example of figuration A/Ba shows free three-dimensional square movement and its structural analysis. Or seen synthetically:

1. Noun or mototless base picture.
2. Linear and zone structure.
3. Structure moving in two dimensions.
4. In the higher example of figuration measure and weight movement are added (colour and texture).

Three-dimensionally.
Cf. preceding pages:
Dissimilarity and weight and their movements.
Expansion—Impression.
Contraction—Extension.
Augmentation modes:
Shift, Rotation, Reflection.
60/71.

Possibilities:
1 colour designations
a red
b green
c yellow
d purple
e blue
f orange
g black
h grey
i white

2 arrangement
3 reflection
4 done in colour.

An example of complementary reversal:
1 colour designations
2 process of complementary reversal
3 done in colour

1933/Qu. 1 Colour plate Qu. r.
Paint with coloured pastes, 37.9 x 48.9.
Approach, essence, semblance
Essence contrasted with semblance.
Practice on fruits.
Essence of the apple, the snail shell,
the human habitation. 8/7.

Dynamic forces (active lines)
Concepts: Dynamic forms - limiting forms
Added abstract element: active-linear
Linear-medial
Dynamic forces are within (esoteric)
Limits are without (esoteric)

Interior-exterior
The interior is infinite, all the way to the mystery of the inmost, the charged point, a kind of sum total of the infinite (the causal). Comparison from nature: the seed. The exterior is finite, i.e. it is the end of the dynamic forces, the limit of their effects, dictated by the causal.
One may also call it the virtual, the objective. One could also say: erotic-logical - eros- logos.
(Retrospect 1925, 12 November 1925.)

1900/90: Colourfully blossoming
Pastel with coloured paste on paper.
41 5 x 31 5.
Representation by essence.
Open cross-section of blossoming.

1905/90: Flowers in glasses.
Oil on paper on cardboard.
52 5 x 41 5.
Representation more by semblance.
Individual proportions related to one another and to the whole
Their cause and effect
Proportion expressed as active, medial, passive
Will and means to movement
Function of a movement proportion
The forming of an organism from out its essence:
The human body
Life-filling figuration of an individual proportion

11 December 1923

Building upwards from below, from matter animates, we have entered upon a higher region, that of individual proportions. Its theme is the relation, in appropriate number, of parts to one another and to the whole. These are relations of many different types – of like kind such as size contrast, heaviness, quality, degree of activity or passivity, relation of cause and effect, or of mixed kind such as the simultaneous figuration of several such relations, e.g. blending colour with tonality and line.
Expression of proportion
active, medial, passive¹

Drawing
from the Theory of form and figuration. 1930.

1 Cf. Action, passive, medial:

I shall endeavour to bring home to you as closely as possible the proportions that play a part in your own body. Imagine that you wish to draw close to you an object that offers resistance to such a movement. You first fix your eye on it and envisage the path the object must take. Then you seize it and force it close to you. So long as the object offers no considerable resistance, this seems to take place quite simply, with respect to our awareness. Our willpower accomplishes it all, as we clearly sense. Yet soon, e.g. if the object is very heavy, we note that our will is not all that autocratic. At this point we become aware of our arm, which must make a rather considerable effort, ultimately even painful.
(1) Form structure (two equal elementary forms).
   Two formal elements of like kind, with mutual cession of territory. 746.

(2) Form structure from unequal elementary forms.
   Three circles with equalised parts relinquished. 746.

(3) Mutual effect of two forms of like kind.
   Peaceful adjustment or unequal surrender of elementary territory. 754.

Possible forms:
"Several unequal forms, interpenetrating. Representation constructive or impressive. One
above the other or side by side. Organism organically interlinked from main forms or
bodily-spatially permeated."
Active-passive: Cause, effect and mediation.
Possibility of simultaneous figuration of several mutual relations and their equilibrium.

(3) In the common territory, the two contrasting parties enjoy equal rights." EN.

[1] Medial floatingly attracts active, is saved by passive.
What is active, therefore, is not merely the will but the means for movement. Two main parts in the necessary action thus enter into a relation to one another, the means for movement not being a thing of primitive uniformity, but in turn a composite concept, organized on its own. Namely muscle and bone, things of different structure and function: muscles - elastic tissue; bones - firm hard structure.
Means as such
Will,
means,
muscle,
bone

The functioning of the two
differs as follows:
A muscle
connecting two bones
contracts,
altering the angle of the
two bones.
Bones have no inherent movement potential, but muscles do carry such a force, or at least they exert it. Actually, they receive this energy from elsewhere, as a command, so to speak. Our movement proportion is thus organised into three different parts:

Will, active,
Muscle, modal,
Bone, passive.

They partake of the active, modal or passive character.
A proportion with the contrasts:
superior—inferior
lying over—lying under
Will, object.

The object must take this way.  
I.e. a longer distance must become a shorter one. In other words, measure. This is the proper category for the passive action of bone as well.

Greater, smaller distance.

The object, therefore, is no new link in respect of its character, but is identical with bone. Muscle is initially extended, thin, lighter, then, when contracted, denser and heavier. In other words, weight.
The brain, as an activity, alters in a different way, immeasurable and imponderable. It is a refinement of action, which I should like to call quality. Expressed by our ideational means of figuration: colour, tonality, line.

Colour, line, tonality.
We may, as innocently as possible, conceive a scheme converging towards a centre, carrying out a progression of this meaning, the centre comprising precisely special forces.

Progression of meaning:
- Bone
- Muscle
- Brain

Bones, Tendons, Ligaments, Muscles, Nerves, Brain.


Obviously there are still intermediate links, even here. Nerves run from brain to muscle, muscle and bone are linked by tendons, bones among themselves are linked by ligaments.

This action just depicted serves man's outward form by way of partial action. It is a structural idea from within, in this case the pathway from headquarters (the skull) to the extremities.
Let us initially ignore the limbs and consider the body in its outward state of rest. Since at a pinch one can live without arm and leg, a series of animated internal processes, capable of organising head and body, takes place.

The head, of course, is always essential.

It is the chief organ, headquarters and main guardroom, with a lofty view for the waking function, installed as high as possible and mobile for better outlook. And we have: Head, body, with the connecting link of the neck.
Further:
Food intake (and output)

provides body articulation by the dividing point of the stomach, yielding a division into upper and lower body.

Abdomen

Further:
Utilisation of food intake; blood channels.
The lesser circulation leads to the concept of chest.
The wakeful and vigilant function of the head leads to the body’s upright stature. Concept: body musculature in concert with body bones, first of all the spine, then basket and basin-shaped structures, reinforced chest, strengthened seat.²
Increased alertness above leads to the standing position.
Complexity of structure.
The spinal column rests on a bridge.

Increased reach in the seated position:
Arms and arm movements.
Shoulder,
bones and musculature.

Ultimate bodily reach:
walking and running.
Hip joints,
moving legs.
Ultimate enrichments
(complications)
of articulation are the result
of the division
of arms/hands
and legs/feet.
Free form-giving example from the Theory of articulation. [IV:103a].


You like that? I have no objections. I do ask that you take serious account of the path that has been followed, of the forming of this organism from its essence. Then this brief endeavor will find its meaning. Figuration as the way from demand to finished form.
1938/14: "Voice from the other. 'And thou shalt have thy way.'"
Oil and tempera on paper, 90 x 38.

1938/14/19: "The body too has a countenance. Coloured pencil and oil on paper, 31 x 20.5."
This afternoon I should like you to continue the exercise we began last time. And this time I want to see not only lively figuration of an individual proportion but treatment of both elements of articulation, the dividual or structural and the higher element, the two in some form of combination. The remarks I am about to make are intended to give you courage, for they will show how simple the matter really is. I ask, however, that you do not slavishly follow the schemes that are shown but merely take them as models for your own vivid creation. They are to serve merely to give you ideas.
Individual and individual structural elements

Representation of dimension and weight
Physical and imaginary integration of the limbs of an individual
Structure and lack of structure
Individual—individual synthesis
'Self-experienced' structure

I shall show you some cases, in which the problem is posed both concisely and cogently.

1. A structural area of such small dimensions that any reduction or abstraction is only barely possible. Each structural particle has the same value [1].

2. In the centre of 2 an aggregation of particles establishes a new context. It is a pattern based on the structural grid of 5 x 5 units [2].

They are assembled in order to be able to hold their own against the structural grid and somewhat enhance its formal triviality [3].
The individual pattern, called a cross, now agrees quite well with the structural aspect.
The two mesh.
Is this indeed an individual pattern?
Yes, an individual pattern of the character of a regular cross.
Structure has been shifted into a cross.

For I must add nothing or it becomes a different kind of cross.

And I must take away nothing, or it causes to be a cross altogether.

As an example of form, its articulation is:

simplex, duplex,
As a formal effect, considering the special significance of the centre, it becomes quinquartile.

This scheme, however, still constitutes no living figuration. It would come rather more alive, for example, by the logical inclusion of pictorial means. The structural part in scale representation:

The individual part in weight representation:
- i.e. 4 parts:
  - b c d e half-weight
  - a full-weight

Or: Give tone to the structural part, e.g. light, medium or bright and dark, perhaps in chequer-board alternation, the individual part, however, in colour. Perhaps:
- b c d e light red
- a dark red
Another solution to the problem:
The structural and individual elements might also be located by a process in which the individual experiences a structural articulation in his own body.

Vitally represented, say, by the weights of univalent to quadrivalent tonalities, with greater contrast at the centre and loss disparity elsewhere.

In the manner in which a fish has scales on his own body. Colour IV/182a and 9/24c.
In another individual pattern, the quinquepartition is so obvious that one is reminded of the five on a die.

The parts are here only loosely connected, indeed, not at all, in the case of the five on a die. Yet they belong together inescapably, and nothing may be taken away or added without destroying their individuality. Thus their integration, while imaginary, is no less compelling than the physical integration of the five parts of our cross.
The last time I was critical, in a few cases, of the casual way in which the members were loosely scattered, so that one could almost blow them away, but that does not mean that members must always be physically connected. Thus we may, in good conscience, accept the distinction between physical and imaginary context, differentiating the physical connection of the elements of a pattern from the imaginary.

Articulation with an imaginary trend
[5, 4, 5]

Articulation with connected trend [2, 6, 7, 8, 1]

We may also distinguish, as we have already seen, the working together of structural and individual articulation in the physical sphere of the individual himself or beyond him into a wider sphere.
Here are some basic possibilities for this afternoon. Let us briefly summarise again:

The two elements of articulation combined

Formation of a higher intermediate articulation by the interlocking of certain main elements

3 = intermediate elements
   Individual element I
   Individual element II
   Individual element III

Change in structural character coinciding with higher articulation
Formation of intermediate elements by structural overlaps or interpannotations.
When the visibility of the structural rhythms is very different, one may speak of an intermittent structure.

Figuration examples for linear and planar structural rhythms.

Construct with alternating structure and lack of structure from left to right.

1964. 2. Castel of a chthonic order.

1964. 3. Castel of a chthonic order.

1964. 4. Castel of a chthonic order.

Scheme 65A. 'Individuals', and its synthesis are repeated in Fig. 1. 3. Castel of a chthonic order.

4.2160. The graph of this fragment shows the possibility of a two-dimensional approach to the analysis of a complex.
Dividual-Individual synthesis

Exercises, 6/29.

Basic scales, tonality—or colour complementarity
A rhythmic-linear example
A dividual example
An individual example
combination of both

Means of representation

Either:  
dividual

Individually accepted line
or:  
accepted line [1]  
tonal equivalence [2]

or:  
line

colour [3]

tonal equivalence [4]

or:  
line

colour [5]

tonal equivalence [6]

one-dimensional

one-dimensional

or two-dimensional approach

The lower part of 6/29 has no direct connection with the required exercises concerned with dividual and individual synthesis. It relates to the main sections of the theory of force and figuration.

Elementary forms and their inner being (forms) threads, nodes:

Elementary forms in format (normal)

Combined forms in format (the species), one element shifted over another.
Dilettante: individual synthesis in a figuration example, with line and boundary, line and colour, tonality and colour as the modes of representation. There is at the same time a synthesis of introspective and extrapausal representation.
1921. Côte de Provence.
Watercolor in. 25 x 19.

CT: 1921.5. Côte de Provence 7, p.282, also 1927.3. Côte de Provence 6, p.335.
In the summer of 1921 Klee was on the Is de Porquerolles and in Corse.

1927.4. Côte de Provence 7.
Watercolor. 13 x 19.8.
1939/40: Rockyledge,
Watercolour and air brush on paper.
37.5 x 25.5.

Form-giving examples with structures on divided-
phrased base and with individual accents
(dedual-individual synthesis).
From 30(6a).
Take the case of the dual circulation
Without structure, with structure

195/345: Overgrown house.
Watercolour and tempera on chalk ground.
18.3 x 17.5.
Alternation of structurally accentuated and
unstructured areas in a landscape-architecture
setting.

[1] Fish with scales. Integration of structural and
individual articulation in the individual's physical
sphere. 30/99e.
[2] Structural character alternation in higher
articulation. Alternating structures | - o as
divisible, divisible articulations. The middle without
articulation. 30/99e.
Broadening a force means thinning it:

Extremes:
Small and dense
Large and rarefied.

Sharpest deviation from this law of nature is its reversal.

Extremes:
Small and rarefied
Large and dense. 21/61.
"Scattered" as against "compact" structures always create strong contrast. This is true also of alternatingly distinct and blurred structures. Structure and absence of structure. Cf. page 215 for the outcome of small and dense, large and rarefied, small and rarefied, large and dense.
"Scattered" (structure) as against 'compact' always creates strong contrast, especially when the consolidation is very dense. It is then easy to take the step from an alternation of distinct and blurred structures to an alternation of structure and absence of structure. This is in explanation of the concept of absence of structure.

"Scattered" compared with 'compact'. Apparent absence of structure.

1925-6: Settlement in the woods.
Pen-and-ink.

Drawing
from the Theory of form and figuration, 11.392.
Fig. 1: a cell (constructed from sexipartite circle).
Fig. 2: A cell partitioned (by the cell in the back).
Fig. 3: Front and back together yield a rhombic articulation.
Mechanically based patterns (Auslegungen).
Pattern 1
Pattern 2
Pattern 2a (turned at right angles)
Pattern 3
Pattern 3a
Pattern 3b
Pattern 3c
Further subdivision or expanded form (after Pattern 1)
Further elaboration:
The house is but shell, space,
The essential element is the life inside,
The lines are limiting lines.
Within a "cell" stand three living lines.


Variation of incarnation to

Incarnation to
ends with the
triangle surface
Progressive variants of incarnation towards bone and away from bone.

Theme

Analyses: A-B, 2: C-D, 3: E-F

Analysis: A-B

Normal variant towards bone

Rotation variation

Rotation stages

Stages:

1 1 1
2 ½ ½
3 ¼ ¼
4 ⅛ ⅛
5 ⅛ ⅛
Linear, two-dimensional and three-dimensional structures
Preliminary creative stirrings
Creative involvement in the actual work
Relation of form and the act of forming
Approach more important than goal
Form as genesis, growth, essence
Elementary doctrine of creativeness
Identity of approach and work
Doctrine of proportions
The analytical approach at several levels

Tuesday, 9 January 1984

After the Christmas holidays, this may be an appropriate time to take a brief glance back over the path we have followed hitherto. Fortunately we can see the distance we have traversed in perspective and have no need to dwell on detail. We can take a broad view of the main elements of what we have done.
What have we actually done during the months just past? What was the nature of our activities? What designations can we find for them?
When we began—one must make a start somewhere, even though there is no real starting-point—we proceeded from a stage that may be compared with a germinating seed. Initially we dealt with linear structures that branched and did so within a given plane. Leaf stems and veins on the one hand, leaf surfaces on the other. We compared the growth and branching of our line with the growth of plant organisms, and in the case of the apple we passed on from linear structure to the sphere of space. A more intimate consideration of these processes led us to trace the mystery of creativity, the influence of which we felt even in the development of a line. We sought to approach this mystery by enquiring whence it originated and tracing it back to its sources. We were not bold enough to think that we could actually uncover the secret main springs of creativity, but we did wish to get as close to them as possible.

We wound up with the irritated point in nature, which we invoked in the course of our consideration—the seed itself. With this seeming start, we reached the limits of our action. The irritated point, our stylus poised to embark on a line—here is minimal action. With anything less than that we can scarcely speak of action at all.

But emotionally and intellectually, this point did not as yet constitute the end of our search for sources. The term 'irritated' already sets the scene for an 'active' start. It provides the background for the initial act, ties it to what has gone before, defines its link to the past. The instinctive realization that we can continue beyond the start finds confirmation in the concept of infinity, which reaches from the beginning to the end, and is not limited to the beginning alone, and which leads to the concept of circulation. In a circular process, movement is of the very essence, and the question of a start thus becomes irrelevant.

Swept up into such normal movement, we find it easy to develop a creative disposition. We are ourselves moved, hence find it easier to impart movement.
(1) Dynamic forces of varying density with.
alternating structure.
(2) Dynamic forces in one direction, line
accompanied by.
(3) Productive line growth. Widening, progressive
enlargement.
(4) Influence phenomena of a line: Trend towards
useful spreading. Diminishing density away from
the limiting line or augmentation towards the
border zone.
(5) Changing border contrast, with accent in inner
and outer edges. Fluctuating limits.

On the question: How to achieve representation,
and e.g. emphasis on the processes leading to form.
Representation by contrast, e.g. concentration in
contrast by emphasis. Or representation of the
dynamic-structural aspect.
The examples of form rotation (3-5) analytically support
the basic scopes. According to the 'physical-actual'
interaction processes' the limits and the application of
gradual emphasis are relative and merge, one
into the other.

(2) Gradation on extraction of the line, Volume 1,
p.57.
Boundaries of different scales inside and outside,
Volume 1, pp.58-77.
Substructures examples, Volume 2, p.61.
Examples of form-creating models. Natural growth.
Volume 3, Notes, p.91.
A thermo-structural in different ways, Volume 1,
p.258-291.
Basic relations in positive-negative plane formation
and treatment of relief, Volume 1, pp.438-449.

1882: 5 Growth on alone.
Woolen on a paper plane. 20 x 30.5.
The preliminary stirrings within us, our craftsman's propensity directed towards the actual work and our transmission of this involvement to others, is the beholder - these are the main components of the creative totality - pre-creation, creation and post-creation.

The inner impulse is the urge that leads to production. As in nature, so with us. Nature is creative, and we are creative. Nature is creative down to the minutest scale and since the briefest scrutiny suffices to discern that, we too have begun on a small scale, emulating nature, it has been easy, under nature's guidance, to recognize our own creativity.

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Allowing a primitive and concise output to unfold in this fashion, we took the opportunity to have a closer look at two things: on the one hand the phenomenon of form-giving, in its context with the basic urge, in the sense of a way of life developing from a mysterious motivation towards purposive action.
1983/12: Knight with elephant.
Pen and ink and watercolor, sprayed. 31 x 31.

1983/12: Winged.
This phenomenon was discernible even in our initial practical work, when form (structure) began to take care of itself on the smallest scale. The relation of form and form-giving, recognised and learned on that scale, retained its fundamental importance even during the later stages, precisely because it is a basic principle.

I should like to lay down this significance in a single sentence: The way to form, to be dictated by some inner or outer necessity, is more important than the goal itself, the end of the road.
Harmonised progression
of a movement dimension
(horizontal line marching in the
above-below direction).

Harmonised progression
of two dimensions
(horizontal and vertical lines
marching in the above-below and
left-right directions). 17/8ta.
1925/5/5: Ship II C in port.
Oil and watercolour on chalk-ground cardboard.
39 x 56.

1925/5/5: Commerce.
Oil on paper. 39 x 56 (full size).
The approach is what counts, determining the character of the work. That character can be determined only once. Form is set by the process of giving form, which is more important than form itself. Form must on no account ever be considered as something to be got over with, as a result, as an end, but rather as genesis, growth, essence. Form as semblance is an evil and dangerous spectre. What is good is form as movement, as action, as active form. What is bad is form as immobility, as an end, as something that has been infiltrated and got rid of. What is good is form-giving. What is bad is form. Form is the end, death. Form-giving is movement, action. Form-giving is life.

These sentences constitute the gist of the elementary theory of creativity. We have now got to the heart of it. Its significance is absolutely basic; and I don’t think I can repeat the sentences above often enough. This was one element that obstructed when we allowed a primitive, conscious work to unfold gradually. But then, in the course of it, something else grew manifest to us. In attending the intermediate creative process to a wider and longer path, we realized the need for not keeping this road too monotonous. The approach, as the work’s essential dimension, must not tire us. It must be refined, develop interesting offshoots, rise, fall, dodge, become more or less clearly marked, grow wider or narrower, easier or harder.
The various sections of this road had to undergo a certain measure of organisation; and although extensive, this organisation had to be held to manageable proportions. The relation of the various parts had to be obvious.

This identification of the work with the approach to it organised itself en route, so to speak, moving from a single pace at the outset to several farther along. The various sections traversed had to fall into place properly.

This integration and interrelatio of the whole with natural articulation of its parts constitutes the very heart of the elementary theory of proportion.
Differences in the character of the work result in different types of integration. Our plodding way has led us through two of these areas, the elementary theory of creativity and the elementary theory of proportion.

Next, of course, we shall put you to the practical test. You will be expected to demonstrate, in modest tasks, what you have learned and how far you have come. Since we cannot really tell whether you have been listening, we shall ask you to progress to autonomous work. Not that we want you primarily into draughtsmen and painters! But we shall have to do a bit of drawing and painting together, since these activities necessarily put us in touch with essential ways in which things hang together.

That is the reason that I shall have to introduce you to the various pictorial means on the next few occasions; and naturally I shall be giving preference to the means of line, tonality and colour, since I feel more at home with them than with the more immediate three-dimensionality of sculpture.
184/112: Still life with proats.
Oil on muslin on cardboard. 50 x 46 cm.

185/112: Porcupine (looking around).
Black chalk on yellow wove paper. 31 x 33 cm.
In all the distinctions I am making, e.g. line, tonality and colour, and in all the sequences and juxtapositions of 'the whole', please bear in mind that these are no more than make-shifts, albeit necessary ones. The theory of creativity, the theory of proportion, the theory of pictorial means and later on the theory of style—all these really have no independent existence. They become integrated into a single whole.

You have only to envisage something that is spatial to grasp the problems that necessarily stand in the way of an analytical approach. But how else is one to achieve orientation in space? I do not know!

All these distinctions, even the most banal ones, make sense if we bear in mind that they describe only partial values and if we do not lose sight of the whole. You can hear people say that they divide mankind into the good and the bad, the large and the small, the thin and the fat, Catholics and Protestants. When such distinctions are taken to be exhaustive, they are merely stupid. If on the other hand we remember that any such pair of statements is only part of the truth, in an analytical sense, they do make some sense. Each such pair—good-bad, thin-fat, etc.—then applies only to its own premises, and taken together these various planes add up to a spatial whole.

In such a context we begin to see that a person may be individually described as possessing a certain measure of height, girth, virtue, etc., but that only their sum total will make up the whole man. If a man is thin, this does not necessarily exclude his also being moral. People have too many dimensions not to be able to be different things at the same time.

So far as our own sphere is concerned, I may, without being misunderstood, make expert distinctions between tall and short on their own, light and heavy on their own, blue and red on their own, static and dynamic on their own, etc.

The real reason is that I am deburred from doing what I would rather do, discuss the whole at one stroke—this whole that embraces a very large number of these things, each in its place. Hence I have to settle for the analytical approach.

What I have said applies even to the simple distinction of the three pictorial means, line, tonality and colour, for any patch of colour will have these qualities:

1. A certain hue.
2. A certain degree of brightness.
3. A certain linear contour.

All three of these qualities are apparent at a glance, so to speak. Any colour patch, in other words, is already essentially threefold.

(Imagine the confusion attending any work that has grown far beyond multiple figuration [content]. Hence orientation I hence analysis I)
Sowing
Scattering
Spraying

Bricklaying
Fitting
Chain

Clue to oscillate
Bring forth musical sound

Things that are sown, scattered, sprayed, dusted, star-spangled, etc.

Later on you will be expected to try your hand at practical work in this field. Yet while we should be sensitive to the infinite scope of variation, we must not forget that for the time being we are confronted with a relatively undeveloped sense of proportion and that even as we exercise our ingenuity, we should vary but one element at a time. In doing so, we identify with our material, impart a rhythm to it, make it rise to the first stage above its imperceptible structure (consistency) — and not very much more.

In this process always keep your eye on the higher proportions of individual structure, by way of contrast, for it is from them that form-determination issues. They govern, while structure itself merely lends support, as a pliable material aspect. The governing proportions characterise the ultimate form, the structures make possible their realisation. Only form-determination and form-realisation together yield the higher configuration.
As for the nature of the governing proportions, I cannot really force such living, breathing things into you. I can only tell you what they are like. I can tell you that the human proportion constitutes such a governing proportion, as we established in the evening life class. As human beings, we have it within ourselves and about ourselves. That we have it within us fits us particularly for creative work.

Let those of you who insist on precise characterization envisage the two contrasts expressed in numbers, approximately as follows:

The structure of one is to one as one is to one.
Construction of the golden section.

The example relates to the proportion of the golden section: Division of a line into two parts in such a way that the smaller part has the same relation to the larger part as the larger part has to the whole line.

Construction of the golden section: Basic construction and golden section.

Golden section: Absolute symmetry and relative geometry.


Division of the line AB by golden section

Draw a line at right angles to line AC through Point A.

AC = \( \frac{1}{2} \) AB
CB
CA = CK
BK = BF

3+5 = 5:8
8+13 = 13:21

Individuality in a standard example

The smaller part is to the larger as the larger is to the whole.

3: 5 = 5: 8
8:13 = 13:21
On the subject of the snail, Klee made this note: 'From the need for shelter, combined with growth, to the house; combining to the apply, from flower in (full) shell. Essence of apply, of full shell, of man's habitation.'

Structure and individual contrasted resonance-application to the original force

Tuesday, 29 November 1923

Klee's natural history collection included sea and land shells, some of which he had brought back from his trip to the Baltic and the Mediterranean. In his studio he filled a portfolio with pictures and photographs of various forms and shapes of the shells published as 'Seventeen of nature.' A major part of this collection consisted of photographs, cross sections and ways of reduction.

The picture at the right, for example, shows a cross-section through the shell of a chambered nautilus, the shell being representative of an archeological piece of seashells.


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The snail: From the need for shelter, combined with growth, to the house.
Radial measure of units

Radius measures \( r \) in cm, of radii 4 cm:

1. \( 4 \times 4 = 16 \) cm
2. \( 3 \times 3 = 9 \) cm
3. \( 2 \times 2 = 4 \) cm
4. \( 1 \times 1 = 1 \) cm

Radius measures \( r' \) in cm, of radii 6 cm:

1. \( 6 \times 6 = 36 \) cm
2. \( 5 \times 5 = 25 \) cm
3. \( 4 \times 4 = 16 \) cm
4. \( 3 \times 3 = 9 \) cm

The radial measures in cm are:

- Radius 1: 16, 9, 4, 1 cm
- Radius 2: 36, 25, 16, 9 cm

In the diagram, the radii are depicted as changing directions and lengths.
We have noted the contrast of structure and individual in the theory of proportion. In the structural sphere we have gone through an exercise from which nothing has emerged that is false, true enough, but neither has it given rise to anything particularly lively. Rather what has come out has been on the rigid formal side. Clear-cut articulation and distinction between opposites are of considerable importance, since learning and ordering have the same meaning, as to speak. It is the energy-charged creative force that forms the basic life content, and this we must not stint. So the meaning of rigidity remains in doubt. This force stands revealed in its functions, it derives its living form by permeating matter. It invests matter with life, sets it in motion by a definite order, by definite rhythms (sound figures).

The particles are placed in resonant relation with the primal force. Thus they have no choice but to arrange themselves in the same way as sand forms into sound figures, when its supporting platform is oscillated. The fiddler's bow causing such oscillations has been lacking in much of your work. Something did come out of it, but there was no real reason why it should have. No genesis. This is the real nature of rigidity - the non-functioning of growth: The result is detached from its premises, Form as such.

You might call it dead form - form that no longer functions, that no amount of fertilization can make function again.
Construction of the golden section
Basic progression and golden section
Golden section: absolute symmetry and relative symmetry
Golden section: Circles

Basic progression

Approximate coincidence of both at the point of the second progressive division.

1850 m 10.
Measurement of the edge of the fruit land.
Watercolour, 49 x 60 ft.
A Absolute symmetry or basic harmony or direct even division in psychological representation related to lines and loci.

B Relative symmetry or special harmony in psychological representation as 'golden section measuring movements related to the centre'.

Golden section, IV/116

Theory of proportion, IV/118

As regards the golden section:
Approximation to the basic progression.

Numerical examples:
7.5 : 12.5 = 12.5 : 20
12.5 : 10 = 7.5 : 20
10 : 25 = 150 approximately

Another example along the above lines would be:
3 : 7.5 = 6.25 : 10

Golden section: "circles"
1 Small circle
2 Large circles
3 Whole circle
4 Semicircle (lying sideways)

Note in appendix.
The pictorial means: line, tonality, colour

Let us take a relatively simple unit – say, a grey patch. It has only two parameters. Its density can be estimated and its circumference can be measured. A hairline, on the other hand, can only be measured. The question of its density scarcely arises.

We already know some things about lines, because we have used them more than anything else. Hence I shall be brief, even though I am personally tempted to say quite a bit about this pure abstraction. What intrigues me is precisely the open question of its reality. Realists are quite likely to ask: Is there actually such a thing as a line?
One dimension
Two dimensions

Primal element
Like one dimension
Plane two dimensions
Solid three dimensions

"The point is not dimensionless but an infinitely tiny elemental plane, an atom that carries on no motion; in other words, it is at rest." (Gauss) The point that sets itself in motion, Volume 1, p.128.

Crossed out in the manuscript: 'point, heat'.

But this makes the idealist smile from the bottom of his heart. Even if I cannot see it, he says, I can sense it, and what I sense I can also perceive, make visible. Thus there is indeed such a thing as a line; it certainly has at least relative existence, i.e. in comparison to other kinds, e.g. in contrast to the plane.
It's like this: if we shoot off a long thin arrow or a tiny bullet at a black spot from a distance, what we do is to bring a line in relation to the spot.
And when we tether a great balloon with a long rope, is it any different? Or when we connect an exchange with substances by means of wires?
There certainly are lines, as contrasted with planes and solids. And line is more, many other things. Conducted current, Thought? Pathway, Assault, Sword, stab, arrow, ray. A knife's edge. Scaffolding. And that joiner of all form, the plumbline.
The range from light to dark moves up and down between the poles of white and black. In nature white can probably claim the advantage in spontaneous activity. All things are enlivened by absorbing appropriate volumes of this luminosity, more or less of it, differentiated in keeping with their light requirements.

The force of light is extremely aggressive in nature. It spares nothing and may here and there be so strong as to cause trouble.

There are, however, certain measures to ward off light, measures armed with defensive energy. The superior activity issuing from the white pole, while valid in nature, must not mislead us into a one-sided view. Here too struggle is inevitable, for of itself white is nothing. It becomes a force only in its affects stemming from contrast. Actually, we do not merely meet the given dark with bright energy, but the given light with dark energy as well.
It depends on the substrate, and since this is quite often white—a sheet of white paper or a white wall—it is black that we work with on a white substrate. Something happens that involves black. We work with black.

If, on the other hand, the substrate is black—as in the case of a blackboard or a slate—our 'natural' medium becomes white.

If, lastly, the ground is a neutral grey, black and white could both be used successfully as media; for the neutral ground is equidistant from both poles and inimical to both.

The given white constitutes light per se. Initially, nothing disputes its sway, and the whole is devoid of movement, without a trace of life. It now becomes a matter of bringing black upon the scene and throwing down the gauntlet. The inchoate preponderance of light must be challenged.

We are struck equally by the non-descript impotence of a black surface. It is unmarred by light of any intensity, strong or weak. In such a case, we naturally ally ourselves with white and swell ourselves of its brand of energy.
Medium grey describes the situation of an outright stalemate in a black-and-white context. It is as deadly to figuration as are pure black and pure white. Hence what must be marshalled in such a case is a dynamic exercise that heaves to and fro, and in the process we must help ourselves vigorously from both poles. Aggressive and defensive forces therefore come into play for us, in turn or side by side. We cannot escape the challenge of a vital issue somewhere between the two poles. To this end we must have at our disposal the whole scale of gradations, from top to bottom.
The first thing to concern us is the great wealth of tonal values between the two poles. Ascending from the abyss to the source of light, we are assailed by a sense of the unmatched grandeur and breadth of enhancement from pole to pole. A darkness subterranean rumbles below, a shadowy blurring in the middle, as though we were under water, and the blazing edge of superlight above. The impact of such a progression is memorable; and when we speed the upward and downward movement in time, the resulting impressions can be compared only with the swell and ebb of a raging storm. In such a rise and fall, who could be mindful of individual tones, except for the glaringly discordant poles?

With continuous repetition of this contrasting up and down movement, we may slow down the pace and become more aware, on route, of the twilight middle. To gain a better taste of this neutral zone, we may in time cease to extend our vertical rambles all the way to the awesome poles. As our swings approach the normal, they are likely to focus on the uncertainty of the middle region; and in time we shall come to a first tentative halt, here, about the middle.

N—normal
White basis
Grey basis
Black basis
Pricking our ears upwards, we hear the white hiss in the distance, which we estimate at five miles. Haarkening down below, we perceive a muffled thundering in the depths, the distance of which we also put at five miles. [1]

Next other points pique our curiosity. We move up a bit, to assess the new effect. At this new point above the middle the sound of white has grown much louder, while black has slipped back to half-strength, a very low sound indeed. This is the point at which the effect of white is doubled while that of black is halved. [2]

The distances are in inverse proportion to the effect. When the distances from white and black are as 1:2, the effects of white and black are as 2:1. There are a great many points along the entire length, and it would be infinitely laborious to examine each of them as to the degree to which they are influenced by white and black. Even if that were possible, our sole gain would be a contradiction. We should be calculating something that works only in swift movements; and calculations would thus be impossible.
Examples of form creation:
[1] Movement between black and white along a black-yellow scale. A similar one may be added to his own work in Portfolio 452-30.
[2] Black-and-white scale with mixture proportions, etc.

Then, at mark a)

<table>
<thead>
<tr>
<th>12 Gradation Marks</th>
<th>[ White ]</th>
<th>[ the distance to white ] = 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 W</td>
<td></td>
<td>[ the distance to black ] = 10</td>
</tr>
<tr>
<td>9 W 1 B</td>
<td></td>
<td>[ the influence of white ] = 10</td>
</tr>
<tr>
<td>8 W 2 B</td>
<td></td>
<td>[ the influence of black ] = 0</td>
</tr>
<tr>
<td>7 W 3 B</td>
<td></td>
<td>[ hence the mixing proportion for the total value ] = 10</td>
</tr>
<tr>
<td>6 W 4 B</td>
<td></td>
<td>[ parts white, no parts black ]</td>
</tr>
<tr>
<td>5 W 5 B</td>
<td></td>
<td>[ distance to white ] = 3</td>
</tr>
<tr>
<td>grey</td>
<td></td>
<td>[ influence of white ] = 7</td>
</tr>
<tr>
<td>4 W 6 B</td>
<td></td>
<td>[ distance to black ] = 7</td>
</tr>
<tr>
<td>3 W 7 B</td>
<td></td>
<td>[ influence of black ] = 3</td>
</tr>
<tr>
<td>2 W 8 B</td>
<td></td>
<td>[ hence mix 7 parts white and 3 parts black ]</td>
</tr>
<tr>
<td>1 W 9 B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 W 10 B Black</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At mark d) there would be this numerical picture:

In this way the mixing proportions may be calculated for each gradation, the mixtures prepared in clean pots and each result painted against its mark, which would result in a very precise picture of a tonal scale (p.317).
Another practical method for creating a scale of tonal nuances is the following, which utilizes only black, on a given background of white, which it fights with growing intensity, step by step. This requires the application of translucent pigments (glaze), unlike the preceding method, which naturally used opaque pigments.

White, in other words, is ever-present and must be crowded out step by step.
Our pigment is a translucent black in a dilution of 1 to 10. We cover the entire surface with this solution, except the single blackless white stage. When this application has thoroughly dried, we continue the manoeuvre, each time skipping one further stage.

In this fashion we obtain a rising blackout scale. At every stage in this scheme we are able to determine the proportion of black, beginning with zero and proceeding by tenths to ten.

The intensity of black increases from top to bottom until the deepest black has been reached.
1905/7/8: North Sea pattern.
Watercolour, 24 x 31 cm.

320

Linear representation of a tonal scale with 9 dividing lines and step-by-step indication of the contrast of black and white. An example from one of Hissom's lessons.

321

Simple articulated range from black to white in March (11 dividing lines). GC lesson of 8 January, p.297.
Scale representation (p.203):
Artificial movement on a abide base with differential movement in the base area.
An example from one of Mies's houses.
3. Standing, gliding, shifting, leaping in basal representation, p.26f, and Transition from sitting to sitting and gliding 0012, p.281.

W. Müller, 1952:
What makes effective space,
Block and outline watercolours.
49 x 31 cm.

Form-gliding example 4014.

Strips
Base
White
To and fro of dimensions with progression:
1 1/16 1/16 1/16 1/16

Basis weiss
Strips

Concentration towards black
Reversal

Concentration towards white

White base
Black base
Towards the white
As movement and countermovement
42/86

1 MW/78: Contrasts at right.
Watercolour and gouache, 23 x 36 5.

1 In main writing.
Exercise of 8 January 1924

The exercise for this afternoon is to set up ranges from black to white, which may be either unarticulated or articulated, floating up or down, or moving forwards step by step. These ranges may be set up from hand or by formula, with all or part of the method of dry pigment or with all or part of the method of wet paint or dry pigment.

1 Collection of exercises for the Theory of tonality, for the preliminary course of the second form.

9 January 1924

1. Correct student exercises
2. Measure and weight
3. Chaos and cosmos
4. The medium of tonality in the armamentarium of pictorial means
5. What happens afterwards (figuration)

Before figuration
Spatial order of ideational pictorial means at rest.
The opposite extremity of pictorial means are effective even in point form.
The intermediate stages are less so. They require more scope to become sensible, weighable or critically perceptible. (Or sensibly criticisable.) 8/20.
The grey point in relation to black-white contrast. II/21.

White above
Grey middle
Black below

White line
Grey line
Black line

Why white above?
Why black below?
The problem of top and bottom, considered at the centre of the earth.
Infinit small and infinite subdivision of nuances from black to white.
Nuances not effective in point form.
This balance in nature.
8/22.

This balance synthetic, impoverished, but clarified in perceptibility.
Amiable character of the balance (extremes keep at a respectful distance).

Blending
1. White contrast
2. Black contrast
3. Balance (medium grey)

Practical exercise:
Tonal scale (in 11 steps) by two methods, blending and glazing. 8/20a.

Proceeding from A, grey
a. Grey upwards
b. Grey downwards
Moving in jerks. 8/20a.

Appearance of the work, first exercise

Essence of the work, first exercise

Glazing (white given). 1
8/20a.

Enhancement required (why?)

1 For the glazing approach in block layer cumulation, see the following pages.
Black-and-white methods and tonal scales
1. The blending method. 2. Black layer cumulation (black progression)
Relative black increment and relative white increment

Chaos (disorder), Natural and synthetic order
Apportionment of tonal and naturalistic range from black to white
Scales as artfully ordered movement

Structural order of tonal means
Composite units and higher articulations
Structural combined with individual articulation
Scale structure—Unstructured movement
Tonal action in the realm of tonality
Tonal action of wide and narrow range

Tuesday, 15 January 1924
We last took up the subject of tonal scales, graduated movement from black to white and return.

First method:
Mixing white and black proportions

Second method:
Black layer cumulation
Cumulative total
White

Rhythmic alternation and interlacing of tonal values.
I proposed two methods for plotting such scales, one of them rather complex but precise, the other simple but imprecise. With the second method there was trouble in attaining the deepest black. Enhancement or decrease of brightness grew attenuated step by step. The other, somewhat cumbersome, blending method would have avoided this difficulty.

Well then, when we take a closer look at this second method, we perceive beyond any doubt a constant over-all increase in the proportion of black as we progress with the series 12345678910.

Close up, however—i.e., when we compare any one step with the one immediately preceding—we soon appreciate the special character of the enhancement.

The first stage of black is univalent = 1
The second is bivalent = 2
The difference from 1 to 2 = 1.
The difference from the second stage of black to the third, from 2 to 3, is once again = 1, in the overall perspective.

This difference of one, however, shrinks to 1 in proportion to the bivalent stage. The difference from 2 to 3 (step 1) is relatively smaller than the difference from 1 to 2.

Absolute difference.
Relative difference, measured on the basis of the preceding stage.
Thus this absolute difference of one (subtraction method), when measured on the basis of the prior stage (division method), actually means less and less and keeps on declining from an initial value of one to one-ninth.

In other words, the proportion of black increases absolutely, but at a relatively declining rate. It takes a good deal of time to reach the deepest black, at which point not even the slightest further perceptible increase is possible.

In the practical application of this method, however, this deepest black could scarcely be attained and the enhancement grew less and less perceptible. In terms of precision — i.e., when regular intervals from white to black were wanted — this was a great disadvantage, in rather startling contrast to the first step, from 0 to 1.

Here too the absolute difference seemed a harmless equivalent of one. The relative difference, however — one divided by the proportion of black in the proceeding stage of zero — yields \( \frac{1}{0} \) or infinity.

Thus our black progression begins with an infinite step, followed by a step of the difference value of 1. This constitutes an immense contrast. Although in this case it seems rather dubious, the method is quite serviceable overall, for in the first place we do not always proceed by even intervals, in the second place we do not always want to go all the way to the deepest black and in the third place we may enhance the various stages as we go along.

1 Crossed out: step.

16/350: Just before the lightning flash. Watercolour 36 x 31 cm.

Total progression without regard to intervals. (Progression by density or black measure) 40% of.

[Diagram: Progressive black stages from light to dark]
But in terms of precision, 'scientifically' speaking, the blending method (11, p.341) is more serviceable. It is not one-sidedly oriented towards the black direction, but at the same time also runs from bottom to top, and is based on a medium grey.

<table>
<thead>
<tr>
<th>Relative declining rate of black increase</th>
<th>Relatively declining rate of white increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progressive 'black' error</td>
<td>Progressive 'white' error, 0/81e.</td>
</tr>
</tbody>
</table>

In this table (2), I have entered the figures for the relative increase in black on the interval lines at the left. On the right are the corresponding figures for the relative increase in white, in the direction from bottom to top. The black increase (left) declines from top to bottom and is opposed (right) by the declining rate of white increase from bottom to top. When the relative difference in black at one of the interval lines is especially weak, e.g. between f and g, the relative increase in white at the same interval is especially strong. Thus the respective errors cancel out.

<table>
<thead>
<tr>
<th>Relative increase in black and white</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black White Relative increase in black</td>
</tr>
</tbody>
</table>

[1] Blending method
White
White proportions/
Block proportions
Black

[2] Relative increase in black
and white
We note that there is complete balance; and if we now look back briefly at the black method, we will realize how one-sided it is.

A decline in the difference between adjoining blacks is not balanced by any increase in the difference between whites. There is always the same given amount of white.

It is a moot point whether the scale proceeds at even intervals between white and black or whether there is a concurrent submovement within the progressive order. It is of no importance in the sphere of articulation, which I should now like to link to the black-and-white methods.

At the centre, however, around grey stage f, where the errors are of medium grade, the equilibrium is also of intermediate character.

Blend
White

Medium grey

Black

Form-giving example 9/61
A Chaos (disorder)
B Order a) natural b) artificial

The natural state of a movement from white to black—revert once more to this subject—is unnatural rather than unordained. It is ordered in contrast to chaos, when light and dark are not yet ordered. It is ordered in the natural sense of a flow from one pole to the other. This (movement) range of tension is of infinite subtlety. The particles closest to one another are scarcely distinct. It is not possible to orient oneself definitely. A locality cannot be sharply fixed (confined), everything solid is gently but surely swept along by the current.

The naturalistic movement from white to black constitutes the finest ordering of movement. The main feel may be approximately determined as near-white, near-black and neutral grey regions. More is not possible.
[1] Standing
Gilding
Striding, small strides
Large strides
Leaping in small strides
Leaping in jumps

Gilding is soft (fluid, gaseous)
Striding is firm (solid)
Leaping is hard

First step from general to special methodology on the basis of the concepts:

a. Limitation
b. Discontinuity
c. Regrouping, disproportion

Limitation without regrouping follows the dimensions of the general order in discontinuous gilding.

[2] Standing
Gilding
Striding
Leaping

In tonal representation
Transition from leaping to striding and gliding 06/13
A with defined limits
B with vague limits

<table>
<thead>
<tr>
<th>No.</th>
<th>Color</th>
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<tbody>
<tr>
<td>1</td>
<td>White</td>
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<tr>
<td>2</td>
<td>Lightest grey</td>
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<tr>
<td>3</td>
<td>Light grey</td>
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<tr>
<td>4</td>
<td>Grey</td>
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<tr>
<td>5</td>
<td>Dark grey</td>
</tr>
<tr>
<td>6</td>
<td>Darkest grey</td>
</tr>
<tr>
<td>7</td>
<td>Black</td>
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</tbody>
</table>

### Large leaps
- Defined limits
- Mediated leaps
- Mediation enriched
- Close to striding
- Striding

### Leaping
- Vague limits
- Large leaps
- Leaping
- Mediated leaps
- Intermediate leaping and striding
- Striding
- Gliding

Both cases are a gradation of gradations
A) hard gradation
B) soft gradation

---

1932/1933: Growth of night flowers in the plants.
Oil on cardboard, 41 x 38.
Our need for orientation is expressed in a division and fixation into straight lines, precisely located: and this is done at the cost of reducing the wealth of possible nuances. Indeed, it was these many fine gradations that confused us, as all that is natural starts out by baffling our insight, until, at some point, we reach the reassurance of an orientation.

A scale in itself is already something arbitrary, a synthetically frozen movement. Its inherent crudeness clarifies. Every component line may be firmly related to the poles. We always know where we are and how we got there.

But of course, movement based on natural law may have been perceived with the eye rather than the eye. It may have been like the natural rise and fall of sound, the swelling and ebbing roar of a hurricane. In such an eventuality, artfully ordered movement may be reminiscent of the stringing together of sounds, as in the unique case of musical scales. 

1 Manuscript note:
Superimposed: susleness, suspiability, extension, density, expansion, elasticity (elastic expansion).

Noticeable thresholds may tend to form at the point of incipient movement. Suitable methods for preventing this are progression in dimensions and progression in value sequence.

Integers progressively pushed back 11 points.
Integers regularly pushed back 11 points.
60/90 and 90a.

1300’s to 70’s: Typanum organ.
Oil and watercolour on paper on wood panel. 31 x 40.6.
The repetitive element characteristic of structures is, in this process, the concept of enhancement or dwindling, occurring again at every stage.\(^1\)

\[ \text{abcdefghikl} \]

\[ \text{67a cd e76 w5w au Schwarczbest a56 67 c cd x5w au Weigheblt} \]

\[ \text{abcdefghikl} \]

\[ \text{b > a c > b d > c etc., relating to content of black.} \]

\[ \text{a > b b > c c > d etc., relating to content of white.} \]

The concept of 'larger' is repeated: Wherever, within a major movement, there is a concurrent minor movement, we are once again dealing with a repeating element.

The value differential between \(a\) and \(b\)

is larger than between \(b\) and \(c\)

The value differential between \(b\) and \(c\)

is larger than between \(c\) and \(d\)

Symmetry-\(k\) differential

The word 'larger' is again repeated. The composite unit 'repeating symmetry plus differential' displays divided enhancement, a composite structural element.
Unambiguous movement and countermovement (in a plane).

We now pass to higher articulation in the tonal sphere; and this, as we know, lifts us above structure as such; but since a scale is a special case of structure, we also rise above scale as such; for in order to display an aspect of higher articulation, the arrangement of tonal values must undergo comprehensive change. To rise but a little bit at the outset, I propose that we take the simplest case. Let us cut the scale into two parts, in such a way that the dividing point will leap to the eye.

1. Simplest case of higher articulation.

Balance between two progressions.

Figurative example of the next higher stage of articulation.

Analysis

White

Block
In this case, the split between the two main parts must naturally fall at 4) and 5), where white and black clash sharply, whereas only small increases or decreases occur step by step within the two parts.

In words:
From grey towards white
From black towards grey

Beyond this simplest case, we are led to the broadest scope for combinations.
Progression of the series of integers, 46/14.

On a black base.
Solo active medium: White.
(Note: Intervals must also increase progressively) 60/100.

On a white base.
Solo active medium: Black.
60/100.
Psychological aspects: Major contrast (juxtaposed) lends vigorous expression; but when contrast is mediated, the elements tend to drift apart and expression becomes less vigorous. Large leaps bespeak greater energy than half-leaps. Minor contrast lends less vigorous expression even in juxtaposition. Enrichment and relaxation soften minor contrast, when it is mediated. (6/24 and 24/1).

Sense
Representation
White. Scale towards black.

Sense
Representation
White. Scale by way of black back towards white.

Sense
Representation
Black. Scale towards white, grey, black.

Higher articulation combined with structural and individual articulation.¹

Higher articulation means half/whole/half and the scale structure combined with it runs concurrently through the whole as subarticulation.

Individual: Half scale
Structural: Scale gradation

Whole scale
Scale gradation

Half scale
Scale gradation

Higher articulation rooted in lower while at the same time rising above lower articulation:

The old pictorial symbol:

Realized, for example
from grey towards white
from black by way of grey towards white
from black towards grey

362
Higher articulation combined with structural and Individual articulation.

f e d c b a
From grey towards white

l a l a l a l a l a l a l a
White-black alternation

I k h g f
From black towards grey

Superstructural in the whole

Alternating structural elements in the part-like:

Scale structure

Structure of polar alternation Scale structure

From grey towards white

From black by way of grey towards white

From black towards grey
This银色example from alike's lesson is the work of a she/her student and was added by like to supplement their own work to portfolio 49-50.

Figure 6 example with structural and individual articulation. In part with discontinuous and differential structural articulation.

This is section 8, p. 80: Higher articulation combined with structural and individual articulation.

Example 1, p. 314: "With discontinuous and differential structural articulation."

Figure 6 example 4098, p. 346: "Straightening, gliding, sliding, looping" in total representation.
Changes in tonal values, irrespective of dimensional movement, 40/20.

Note: Value enhancement towards the centre slowed by recalculation from the centre towards the outside.

<table>
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<th>Value</th>
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Cf. Use of measure and weight, Volume 1, p.228.
Weight structures in two dimensions, Volume 1, p.229.
Measure, weight and their movements, Volume 1, p.335.

Succession, or the temporal function of a picture.
Movement as action and form, Volume 1, p.398; also the following papers: Volume 1, p.224, "Product Fig.1", p.237. "Product Fig.1", 30th with tonal data.
Designs for tonal patterns.
1. Planar black-white pattern uses grey at the centre.
2. Tonal pattern at fixed dimensions (plaque finish).

W = White
S = black
G = grey
Sg = dark grey
Wg = light grey

1938/3: Colour grid (on major grey). Pastel with paste on paper, 41 x 34 cm.
1 w = white
2 wgr = lightest grey
3 lgr = light grey
4 mgr = medium grey
5 dgr = dark grey
6 dgr = darkest grey
7 sch = black

Unidirectional movement. 60/67,
$8 \times 8 = 64$.

higher articulation
uniform grey
whole scale from black to white
uniform grey

low articulation
unstructured
scale structure
unstructured

symbol:
realisation analogous to the third example.

5. With discontinuous and differential structural articulation.

white
from white to grey
polar black-white alternation
from grey to black

articulation superstructural in the larger sense
unstructured scale structure contrast alternation structure scale unstructured

Realisation analogous to the earlier examples.
Exercise:
Equilibrium through tonality.
Two pertinent instances:
B/Bla.

a) staccato ego staccato
b) legato
\& scale from black to white
white ego
\& scale from black to white
of unemphasised extraordinary character

\& scale from grey to black
white
\& scale from grey to black

legato
ego
extraordinary
emphasised
legato

In music, accordingly, the quarter-tone scale or the 'chromatic' half-tone scale would be closer to natural differences in pitch than the more artificial major and minor scales. If we had but time to deal with this aspect at greater length, this casual aspect might afford special insight into the sphere of musical style.
But let us now stick to our subject and consider the various cases of exact articulation. We may at once establish with certainty that scales, whether divided into small intervals or large, of equal size or sub-divided, all belong to the sphere of structural articulation.

a) White is the standard and remains the standard.
b) White does not remain the standard.
In a) the units do not touch.
In b) the units touch

Contrast: black
Contrast: white
Isolated forces, staccato
Linked forces, legato
Examples, 60/12a.

Direct major contrast:
- Stormy day: [drawing] [drawing]
- Stormy day: [drawing] [drawing]

Indirect major contrast:
- Stormy day: [drawing] [drawing]
- Stormy day: [drawing] [drawing]

Direct minor contrast:
- Stormy day: [drawing] [drawing]
- Stormy day: [drawing] [drawing]

Indirect minor contrast:
- Stormy day: [drawing] [drawing]
- Stormy day: [drawing] [drawing]

Upper minor contrast (direct):
- Stormy day: (overcast)
- Stormy day: [drawing]

Upper minor contrast (indirect):
- Stormy day: [drawing] (overcast)
- Stormy day: [drawing] (overcast)

Lower minor contrast (direct):
- Stormy day: (overcast)
- Stormy day: [drawing] (overcast)

Lower minor contrast (indirect):
- Stormy day: [drawing] (overcast)
- Stormy day: [drawing] (overcast)
Normal and abnormal movement

Movement is measurable by the standard of invisibility. A formulae in the formal sphere from structurelessness to articulated structure.

One might further include the element of natural movement in the combination, which would add to the concepts already present the subarticulate concept of unstructured movement and which would also enrich individual articulation correspondingly.

6. Unstructured solidity, unstructured fluidity, ordinary structures, scale structures.

Please draw no wrong conclusions from the symmetrical arrangement of these schemes — as though one could not manage very well without them. The reverse would be better — such strict symmetry should be avoided, precisely because it is rigid in character. In general, these examples have only specific (theoretical) meaning, serving to clarify insight by way of orderly orientation. They touch upon and open up many elements of the creative armamentarium, but that does not mean that they breathe that deeper life that stems only from inner inspiration.

Yet we must deal with them, aware that we are not getting to the heart of the matter, merely remaining at the level of organizing our pictorial means, while touching the level of articulation.
Basis distinctes:

1. All scales are structural articulations (individual and non-individual).
2. Character of non-articulation: "Unstructured movement" as part of an individual articulation.

The juxtaposition of the two illustrations shows the difference in full form examples.

1921. Fish. Watercolour. Natural articulation as part of individual higher repertory.
Right scale articulation is subordinate to the higher individual articulation of the work.
"Unstructured movement" may be understood in simple terms as mixing natural form articulation, with formal scale articulation to create partly outlined.
In all this, the level of the elementary creative process must be kept tacitly in mind. From that point of view, I should be playing fast and loose with all the gradations from black to white only at the cost of violating the canon of inner necessity. What I should really be doing in this respect is to differentiate volume and alternation of tonal nuances from case to case.

Let me give a few further practical hints along these lines. Every viable problem solution is in some measure linked to the two contrasting poles, black and white. Even when they are not directly involved but merely allow their forces to feed into the sections relating to them, they inject the interplay of these forces within the black-and-white scale with a feeling of tension.

- "Shape the black arrow.
- It contains a far too rapid development from the given or essential or present while in the direction of the incipience active or impending black.
- Why not the other way round?
- Answer: The accent lies on the minor particularistically as against the major generally. The latter is essential and further in effect, the former unwanted and action. And the arrow lies in the direction of action.
- "The extraordinary sharpening of force (as the productive sense) or of energy consumption (as the negative sense) overshadows everything else in respect of the direction of movement."

Figure 1.12: Tension with Airbrush.
A black rectangle is endoscopically treated as a vector generally against the plane oriented black.
Cf. Volume 1, p. 50.

One may speak of a black-and-white alternation effect (antithesis dual balance).
Cf. 1932, Polyphonic setting for white, p. 306 (full-page illustration, Volume 1, p. 315) as well as 1932,
Naisa/Flowers, p. 386 (illustration, Volume 1, p. 356).

1966/68: Flower vase in three dimensions,
Oil on canvas, 01 x 30 x 6.
The character of an action is determined by the degree of black-and-white participation whether direct or vicarious, and by the various intermediate degrees of direct or indirect participation in the whole of the to and fro. This character ranges from a quiet waiting rise and fall, guided by tenuous threads from the pole — a thoroughly tranquil state of affairs, so to speak — all the way to open struggle, in which the poles leap in and person.

A wide range from pole to pole invests an action with deep inspiration and expiration capable of being modified all the way to hard-breathing wrestling. A narrow range throttles down the breadth to a mere shallow sooth voice, it is reduced to a mere whisper roundabout the grey. Or one rises above this level to the violins — or sits below it to the collos. For those who are unfamiliar with musical terminology, I can put it differently.
White peak

Deep fall
Normal grey base
Action commences

Black peak
Figuration example 60/45.

A. Wide range, the black low and white high visibly intervening in the action. This wide swing of the pendulum from black to white lends force to the action.

Within a wide range, the dramatic character moves in steps from remote control by the poles all the way to open struggle, the sharp clash of extremes.

A. Groote Span wired
1934 AT 26: The Invention.
Watercolour and wax pigment on canvas on wood.
39 x 31 cm.

1939 (b): Head, Nail, Hand and Heart.
Watercolour and pastel on canvas. 46 x 58 cm.
Narrow range
(round about grey)

Black

Struggle within a narrow range.

This chapter ranges from a quiet warning to a second
fall, guided by the usual trends from the pole—a
thoroughly tranquil state of affairs, so to speak—
and the way to open struggle, in which the poles
keep in its paths.

 Reserved action within a narrow range.
Black does not appear on the scene, allowing itself to be represented by grey. Here again, there are different types of action between grey and white.

White allows itself to be represented by grey.

White

Narrow range,
displaced towards the upper region.

Black

White

Narrow range,
displaced downwards.

Black

180/19: Polyepitaxial crystallisation
Of an m-plane of diamond, H 8 x 8 x 4.
Aufgaben

prinzip wählen bestanden, erst zu lösen, Beispiel.
Die rhythmische Lösung.
Ein individuelles Beispiel.
Ein individuelles Beispiel.

Exercises. General scales, tonal or colour-complementary, both combined.
A rhythmic-linear example.
A different example. An individual example.
Unidimensional or two-dimensional plan.

2. A detailed example, the structure of which is repetitious at different.

Claude's Forms and their Forms (forms) (hierarchies) are interchangeable.

Combined forms in format. Elementary forms and their interior (norms); threads, nodes.
Combined forms in format (normal).

Combined forms in format.

Combined forms in format (the species).

Transverse shift.
Originally all the fields were equal in size and weight (energy content). Because of movement, only one field remains normal, the smallest one; all the others have grown by two-dimensional progressive movement.

With expansion, the energy content declines, grows attenuated, in inverse proportion to the content. Conversely, energy rises as content declines. The strongest force balances the smallest figure, 1/1, in it with the centre of gravity. The diagonal cross does not intersect in this field, hence has been shifted.

We have at most 16 units:
then 12
then 9
then 8
6
4
3
2
1
17 = black
16 = black
4 = white
3 = white
2 = white
1 = white
Against a white norm, black is the strongest force as 1 = black
and lastly 1

If scheme on p. 409, amended with shown values.
Reversal of the black-and-white scale in the example Shaded centre of gravity, fig. 171008 c, p. 496, yields approximately the two-dimensional progressive movement in the 1960 watercolour House, inside and out.

As a freely created work, this watercolour is enriched beyond the progressive movement, by transparent interpenetration.

---

1 Unlined, probably Tuesday, 19 January 1884.
2 Example 1, p. 307.
Example 2, p. 290.
Example 3, p. 390.
Example 4, pp. 294-295.
Example 5, pp. 305-316.
Example 6, p. 361.
* Note in appendix.

Afternoon: Do articulations along lines of examples 1 to 6 with means ranging from black to white. In doing so, bear in mind the realization scheme 2.
Alteration and concentration.
(Thickening and thinning.)
45/146.
Illustration on p.406:
Tonal representation of a regular cube of the first section
as transparency.
Measurement by excess of white. 34/17.

Over the entire representational plane A B C D, two tonal values must be considered, for two cube surfaces at a time coincide (grouped side by side). Since the rear frontal aspect applies in every case, its white value ++16 combines with other values,
frontal rear (zero)
horizontal bottom (+16 to +2)
horizontal top (+16 to +2)
vertical left (+16 to +2)
vertical right (+16 to +2)

Each time the 'two values' coinciding at a given plane are added and the sum divided by two, the result being a unit or average value, the character of which may be looked up in the table. For example, frontal rear ++zero or middle grey is modified by frontal rear (+16 or white) towards ++light grey, $\frac{16}{2}=++8$. etc.
The processes of weight and movement and their movements, extension and contraction, are inherently connected in the form-giving examples as pp.136-143, and combined into a higher unity in the oil painting 1800-8: Abstract in relation to a drawing tree.

'Movement causes (or is) the rest to be in the world.'

The movements (and countercurrents) are represented purely analytically in the basic examples as to be thought of as component parts together in composition. The counterpart is the co-ordinate movement (or u. changes in movement and weight).


For the formal correlates, i.e., the square movements, cf. Prima, 1968, p.30: 'The concept of structure, "triangulation" and "polyhedron", as well as in the U.S.A. for Form (63-70) and the contrast double-set of Form and Dynamic (69-116).

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Cf. the complete text of 'Retropect' of the last Winter preliminary course of the winter of 1907/8 (6108). Introduction, p.47.

In this context, cf. also 'Retropect' of 12 November, 1909 (61), noted on p.46 of the introduction and transcribed on p.145, as well as the 'Retropect' of March 1917 (84 and 85), text 1-6, the text of which will be found on pp.101 and 105.

In respect of pictorial content, cf. the letter for Operation example 1070a, p.119.

'Sensory flower dance in the process of unfolding.'

Approach to an open cross-section of a flower, with a living cross-section, a blossom springing up natural insight into the cross-sectional planes. This special sensitiveness of the generative process of sensory-sensitive tensions, synthesis of dual components, their special expression in colour moments.

Cf. Klee: 'Abstract in relation to a drawing tree.'

Three two-axial examples are on the one hand thought of as forms of movements (v. changes in dimension and weight).

Cf. 'Approach, sensual, sensitiveness, dynamic forces', p.146.

A formulation by Martin Heidegger in Die Frage nach der Technik, 1954, strikingly characterizes the abstract processes: 'The blossom breaks forth into flower, into itself.'
We certainly cannot live without a head. Indeed, men are beheaded, while they are to be disarmed—the hand, in other words, is the chief organ. Like the battlefront of a nation, it is placed as high as possible, as the main guardhouse, as headquarters. And in order to keep a better overview, it is mobile. This at once collides into the neck, the neck as a connecting link.

"So far we have head, trunk, neck. The trunk is again subdivided into a lower part, the abdomen, and an upper part, the thorax, particularly assigned to the circulation, especially the lesser circulation through the lungs."

"The higher the head is borne, the better the main guard functions. Hence arrangement must be made for the whole body to stand erect.

"This is accomplished by the musculature, in conjunction with the bones. The main support is provided by the spinal column and the back muscles."

"Shoulders and hips provide the bearings for the organs of movement, arms and legs. Anatomical examples to follow later, so that we may get to the pictorial elements: dimensions, weight, quality."

"Chest and points of the main upper and lower components of the trunk's skeleton, basket-shaped above, oval-shaped below."

"In between self-arrangement (the waist)."
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1980:22: 1, 'Then hit it be.' 1980: 20 x 38 3
Publication of the writings of Paul Klee remains, at this point in time, a work with low priorities in the Nubian of art, past or present. So far, few of the projected volumes have appeared, the significance of which must be measured by more than numbers. Like the multi-faceted author himself, the contrary side of the quill that bears his name is art. A blend, consisting of the public faces of an intensely private person and the private objectification of symbolic or mystical lines, produced a unique œuvre. For Klee, the œuvre is verbal as well as visual.

In the first volumes, the editor included a concise bibliography of basic references. For the second volume, the present compiler has assembled a comprehensive record of writings by and about the artist, excluding bibliography, books, and periodicals. Although some catalogues are listed, in order not to overlook certain displayable works, no effort can be made on this occasion to do these things in respect to exhibitions. First, it is necessary the way large scale of published catalogues which probably exceed in number those for any artist recent Picasso. Second, to certify the chronology and details on exhibitions as events, i.e. those for which formal publications were not issued. Together, the first as bibliography, the second as chronology, each does succeed on separate and extensive listing, containing in the next of this definitive series, in anticipation of a fourth volume of Klee texts. It is possible to foresee a final arbiter. Logically, it should comprise a scholarly reference, in particular an effort to widen international bibliography, i.e., Latin America, the Orient, as well as variant cultures and republics; secondly, a comprehensive index to colour reproductions in the literature included in the bibliography and, finally, an exhaustive author index to all citations in all four volumes.

Readers will be interested that Klee's importance does not seem to lessen with time. In all probability, the nature of the art and the temperament of his century emerge confirmed that commentary will continue to expand. Both the compiler and the artist will search for a point of equilibrium as they reconcile the visions of the world without with the realities of the world within Klee's development one never loses, and his clarity inspire reflection and sequence. His literary legacy seems hard to match, and as a mirror of a transcendental soul in the arts, matchless.

Without attempting that hard inventory which an exhaustive correlation would entail, the following survey is wide ranging. Chronology or presentation is ignored to favour of more meaningful classifications. That refers to the form in which the bibliography is organized.

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