

Pro-Programmatic

Do you know what the title of the book means? The title of the book can be explained by reference to the book title. A programme can be designed for naming the book. For this, one must know what the book is about. The subject, at any rate, is: creative arrangement. But that is too general. As the author sees it, there are two separate aspects to creative arrangement: the design, to design, the designer, etc. and the programme, to programme, programmatic, etc. Well then, Design and Programme? No. The "and" is too weak. The two ideas are more closely linked than that. Programme Design? Design Programme? No. Both are dependent on each other. Which on which? Each on each. Design of the Programme? Programme of the Design? No. To be sure, the meaning of both is clear. But what is essential lies in between. It lies in the designation of the two ideas. The principal question, then, is the connection between the two words. It can be expressed through any kind of linguistic link. For the reciprocal action of programme and design should be as complete as possible. The solution: to enumerate all the possible ways in which these concepts can be connected. And to consider all these variants as a book title. The best solution would be to list them all together on the cover: Design of Programmes, Programme for Design. Design = Programme. Programming. Designing. Programming Designs. Designing Programmes. And so forth. The book would have to feature a whole list of titles. Since that is not possible, the title reads as it is now. But means an entire programme.

The title can be explained in different terms. Designing programmes can also mean inventing rules of arrangement. Taking a chemical reaction as a parallel, the designer must try to find a group of new combinations by reference to a kind of formula. The formula is paramount. The formula creates the form. Creates a group of forms. Thus, for instance, there is a formula in poetry corresponding to this conception. The traditional structure of language is dissolved. No grammar. No syntax. The elements are single words. They stand loose in the line with all their valencies free. The rule of the game is permutation. The poems arising are called constellations. Constellations are a poetic programme. There is an example in this book. Another example of a programme (and as usual the programme comprises certain elements and certain rules for combining them): four pictorial signs each having nine values are printed on cards viz, the cards for the Swiss cardgame known as jass. The rules for their combination are the rules of jass. The rule of the game = programme. And, considered in these terms, every other game is nothing more than the carrying out of a programme.

More self-evident still, and hence all the less consciously present in one's mind: the formula of the recipe. First the elements are enumerated: take ... potatoes, milk, water, salt, and butter. Then the preparation: peeling, cutting up, boiling, straining, stirring ... Result: creamed potatoes. The recipe is the programme. Simple enough. But interpreting many of these programmes is more difficult. And when it comes to designing them, then the difficulties really begin. That is why it is called an art. The culinary art. And then there is still the whole menu to cook: one programme superimposed on another. The full score is a cookbook.

And then a surprisingly obvious example is provided by another of the housewife's occupations: making something linear into something two-dimensional or even something with a complicated spatial form. And to make it by simple means. What is topologically complicated is simply called: knitting. Programme: in - round - through - off. Result: knitting. Another variant of the programme produces purling. More complicated rules produce more complicated patterns. The programme is contained in any instructions for a knitting pattern. In machine knitting the programme is a punched tape. Example: Jacquard pattern.

Example of a programme that has become a picture: the ornament. For instance: a scissor-cut. Or: kaleidoscope. Two pictures harking back to childhood? Yet there is more behind them than meets the eye. There is a whole world behind them. The simplest elements (form) fitted together in the simplest way (repetition, symmetry) give expression to the spirit of an entire culture. China, South America, Asia Minor, Africa, Greece, Rome. And the geometrical art of today?

Closest to the typical idea of a structural programme come structures in electronic music. Here the structural unity of the mental vision is realized by projection into the musical experience. The elements of the composition are sound units (impulses). Composing with these units consists in regulating a single parameter: time. And the music is a structure of programmed impulses. Structure in the sense of the organization of growth.

Another example of a programme as a formulated predetermination is provided by any musical score. Particular interest attaches to written instructions which make disorder (the most random arrangement) and not order their governing principle. The following example is explained in the book. A composer lets random features of the surface of the paper determine frequency, duration, timbre, volume and entry. The sounds are not predetermined as usual. All the same, the score is a score, a designed programme: that and that are the elements. And I can do that with them. Result: a whole series of solutions. It is not important that the result should be this or that; what is important is that the form should and must take its shape in obedience to an order or formula. It is in the design of the formula (image: a tulip bulb) and not in the design of the form (image: tulip) that the creative pleasure resides. And thus the aim of the creative work.

Programme as Logic

Instead of solutions for problems, programmes for solutions – the subtitle can also be understood in these terms: for no problem (so to speak) is there an absolute solution. Reason: the possibilities cannot be delimited absolutely. There is always a group of solutions, one of which is the best under certain conditions.

To describe the problem is part of the solution. This implies: not to make creative decisions as prompted by feeling but by intellectual criteria. The more exact and complete these criteria are, the more creative the work becomes. The creative process is to be reduced to an act of selection. Designing means: to pick out determining elements and combine them. Seen in these terms, designing calls for method. The most suitable I know is the one Fritz Zwicky has developed, although actually his is intended for scientists rather than designers. (*Die morphologische Forschung*, 1953, Kommissionsverlag, Winterthur). I have produced the diagram below in accordance with his instructions and, following his terminology,

I have called it the morphological box of the typogram. It contains the criteria – the parameters on the left, the relative components on the right – following which marks and signs are to be designed from letters.

The criteria are rough. As the work proceeds, of course, they are to be refined as desired. The components are to be made into parameters and new components are to be specified, etc. Moreover, they are not only rough, they are also not self-contained. The component “something else” is the parcel in which the left-overs are packed if the parameter does not break down neatly. The designations are imprecise in some cases. There are many imperfections. But it is precisely in drawing up the scheme, in striving for perfection, that the work really lies.

The inadequacy of this box is my own and not inherent in the method. Even so: it contains thousands of solutions which – as could be shown by checking an example – are arrived at by the blind concatenation of components. It is a kind of automatic designing.

a Basis

| | | | | | |
|---------------|----------------|------------------|----------------|----------------|--------------|
| 1. Components | 11. Word | 12. Abbreviation | 13. Word group | 14. Combined | |
| 2. Typeface | 21. Sans serif | 22. Roman | 23. German | 24. Some other | 25. Combined |
| 3. Technique | 31. Written | 32. Drawn | 33. Composed | 34. Some other | 35. Combined |

b Colour

| | | | | |
|----------|---------------|----------------|-----------|--------------|
| 1. Shade | 11. Light | 12. Medium | 13. Dark | 14. Combined |
| 2. Value | 21. Chromatic | 22. Achromatic | 23. Mixed | 24. Combined |

c Appearance

| | | | | |
|----------------|-------------|-------------|--------------|--------------|
| 1. Size | 11. Small | 12. Medium | 13. Large | 14. Combined |
| 2. Proportion | 21. Narrow | 22. Usual | 23. Broad | 24. Combined |
| 3. Boldness | 31. Lean | 32. Normal | 33. Fat | 34. Combined |
| 4. Inclination | 41. Upright | 42. Oblique | 43. Combined | |

d Expression

| | | | | | |
|----------------------|------------------------|------------------------|------------------------|---------------------|--------------|
| 1. Reading direction | 11. From left to right | 12. From top to bottom | 13. From bottom to top | 14. Otherwise | 15. Combined |
| 2. Spacing | 21. Narrow | 22. Normal | 23. Wide | 24. Combined | |
| 3. Form | 31. Unmodified | 32. Mutilated | 33. Projected | 34. Something else | 35. Combined |
| 4. Design | 41. Unmodified | 42. Something omitted | 43. Something replaced | 44. Something added | 45. Combined |

Programme as morphology

Unbounded surfaces

Example,

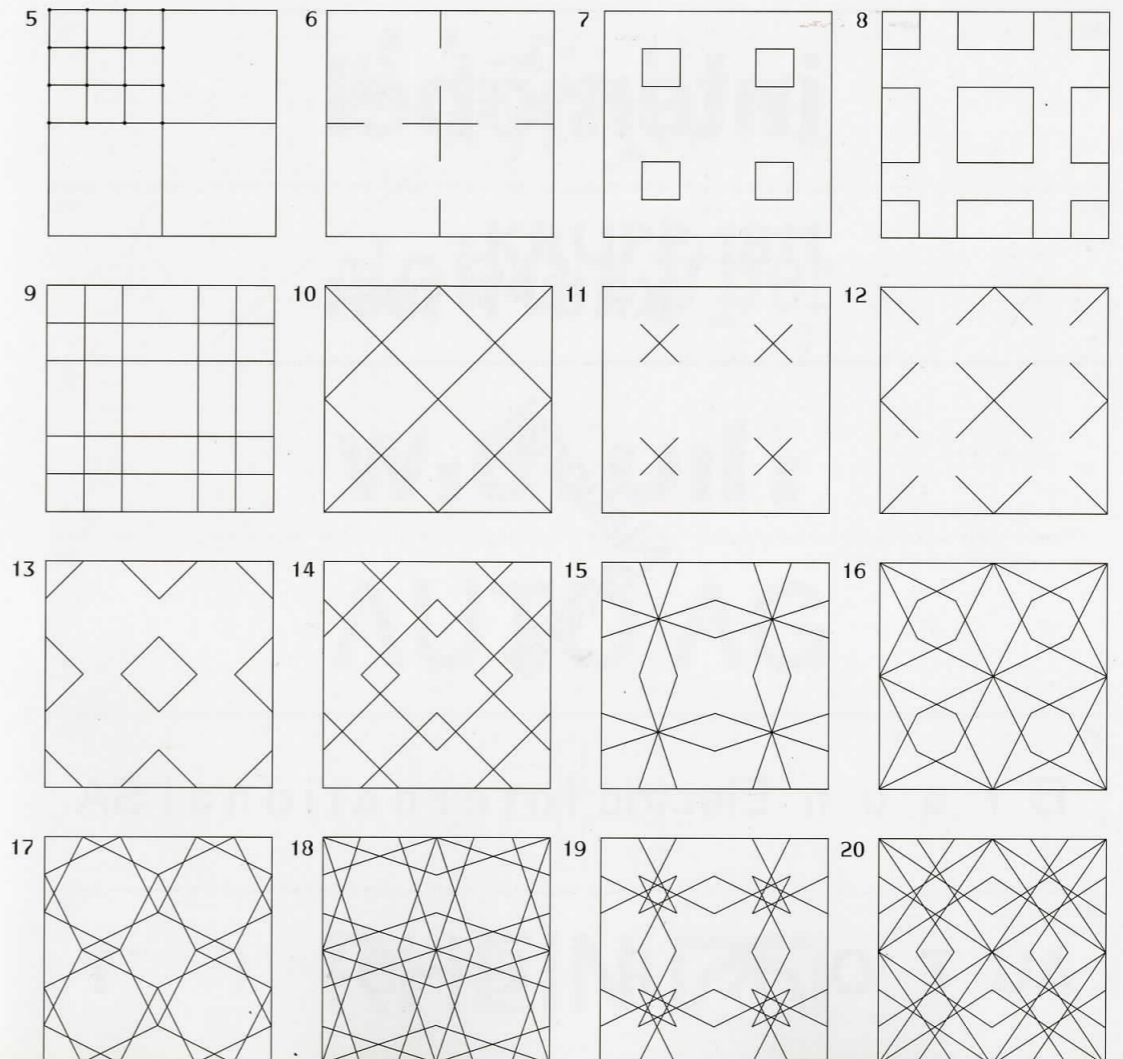
To give at least one instance of the astonishing richness and beauty of such geometrical patterns, Figs. 5 to 20 show forms which can be obtained in a latticework from a square consisting of $32 = 9$ part squares by drawing a straight line between any two nodes. The number of nodes here is 16, which happens to be the same as the number of connecting lines between them and therefore also the number of patterns of the first order. Each total square 32 is repeated four times in juxtaposition so as to show the connection thus established between the single patterns (Fig. 5).

In patterns 5 to 8 the “theme”, i.e. the line being multiplied in conformity to a rule (here the fourfold reflection of the square is being used), lies either minus a side of a square or in an axis of reflection, so that there are only four repetitions at a time. They make the simpler, more familiar forms. The other patterns are developed from lines in another position, each of which yields eight repetitions. The forms thus arising are largely unknown.

Each of the 16 forms can be combined with every other one in a pattern of the second order. They can be easily drawn if first one pattern is introduced into the latticework and then the other is drawn over it.

If three are drawn over one another, a pattern of the third order is obtained, of which there are 560.

From: “*Harmonie der Formen*” by Wilhelm Ostwald. Verlag Unesma, Leipzig 1927



Solutions from the programme

(Not all the solutions were found with the aid of the morphological box. But all those found can be assigned to a place in it and analyzed.)

If all the components contained in the trademark *intermöbel* are added we obtain the following chain:

- a (word) – 21. (sans serif) – 33. (composed)
- b (shades combined, viz. light and dark) – 12. (achromatic)
- c (size immaterial, therefore medium) – 22. (proportion usual) – 33. (fat) – 41. (roman)
- d (from left to right) – 22. (normal spacing) – 31. (form unmodified) – 43. (something replaced, viz. the face of the letter r by superimposition of the two parts of the word).

Not all the components are of equal importance; only two are actually decisive: b 14 + d 43.

The importance of "combined" is shown in example b 14: the components light-medium-dark are not very expressive in themselves because they do not represent an assessable value (apart from black always being dark). But if letters of varying degrees of darkness are combined (as here) the parameter of shade may be the point at which the solution crystallizes out.

Parameters as points of crystallization: I will illustrate all those in the section "Expression" by the following examples: "Reading direction" determines the expression of the typograms *Krupp* and *National Zeitung*. In both instances the component d 15 (combined) forms the basis. In *Krupp* d 11 (from left to right) is combined with d 14 (otherwise, i.e. from right to left). In the case of *National Zeitung* the components are d 12 and 13. Incidentally, the typogram for Bech Electronic Centre belongs here, see page 66.

"Spacing", once again combined in the component, is determining in *Braun Electric* and *Autokredit A.G.*

Again: Solutions from the programme

"Form" is relevant in *Abfälle*, *Globotyper* and *wievoll?*: In *Abfälle* the component d 32 (mutilated, here fragmented), in *Globotyper* d 33 (projected, here on a sphere), in *wievoll?* d 34 (something else, the form is neither unmodified, nor is it mutilated or projected, but "something else": partly silhouetted).

The idea of "design" means something more than is conveyed by "form". To take an example: in *Auto AG*, the dropping of the crossbar of the A's cannot be called a mutilation nor a form operation either. If the form is mutilated, the components are preserved. That is not the case in this instance. The form as such is Berthold sans serif but "something is omitted". The reverse applies to the case of *FH* (Federation Horlogère Suisse): here "something is added": namely, the Swiss cross within the letters. In the case of *Rheinbrücke* there is "something replaced": the part of the word "brücke" (bridge) by the sign.

The reader will have noticed that there is a criterion running right through the examples below: the relationship between form and content.

Basically, every typogram can be produced in two ways: firstly, through the word sense (to interpret the meaning) and secondly, through the word picture (to take the formal data as the point of departure). It would need a second, a semantic box, to bring this within a system. Its components can be found in the examples given here.

Say: the solution for *National Zeitung* is the perception of a formal rotation, *Krupp* is a literary interpretation (Look back to the past, look forward to the future). In *Autokredit* the word credit (payment over a long term) is represented. In *Globotyper* the typeface suggests the typewriter and the projection suggests the sphere (it was originally a name for the IBM spherical head typewriter). "Abfälle" (wastages) and "wievoll?" (how full?) symbolize the idea, etc.

22

intemöbel

23

KRUPP 1961

24

**National
Zeitung**

25

B r a u n Electric International SA

26

A U T O K R E D I T

27

Abfälle

28

globotyper

29

wievoll?

30

AUTO AG

31

FH

32

RHEIN

Programme as Grid

Programme as Grid

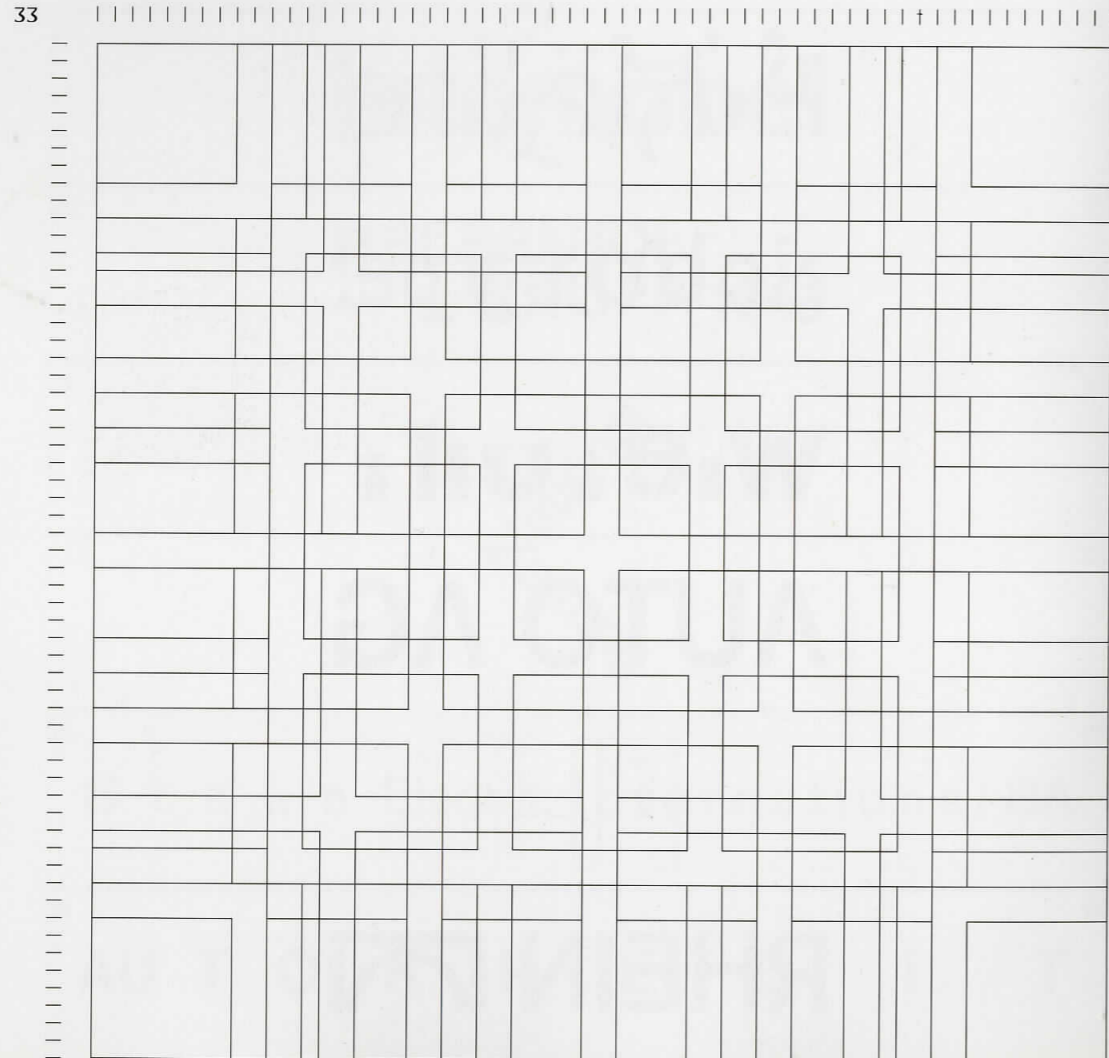
Is the grid a programme? Let me put it more specifically: if the grid is considered as a proportional regulator, a system, it is a programme par excellence. Squared paper is a (arithmetic) grid, but not a programme. Unlike, say, the (geometric) module of Le Corbusier, which can, of course, be used as a grid but is primarily a programme. Albert Einstein said of the module: "It is a scale of proportions that makes the bad difficult and the good easy". That is a programmatic statement of what I take to be the aim of "Designing Programmes".

The typographic grid is a proportional regulator for composition, tables, pictures, etc. It is a formal programme to accommodate x unknown items. The difficulty is: to find the balance, the maximum of conformity to a rule with the maximum of freedom. Or: the maximum of constants with the greatest possible variability.

In our agency we have evolved the "mobile grid". An example is the arrangement below: the grid for the periodical *Capital*.

The basic unit is 10 points; the size of the basic typeface including the lead. The text and picture area are divided at the same time into one, two, three, four, five and six columns. There are 58 units along the whole width. This number is a logical one when there are always two units between the columns. That is: it divides in every case without a remainder: with two columns the 58 units are composed of $2 \times 28 + 2$ (space between columns); with 3 columns $3 \times 18 + 2 \times 2$; with 4 columns $4 \times 13 + 3 \times 2$; with 5 columns $5 \times 10 + 4 \times 2$; with 6 columns $6 \times 8 + 5 \times 2$ 10-point units.

The grid looks complicated to anyone not knowing the key. For the initiate it is easy to use and (almost) inexhaustible as a programme.



Again: Programme as Grid

The grid meant here is the screen of a printing block. A good example for understanding an essential factor.

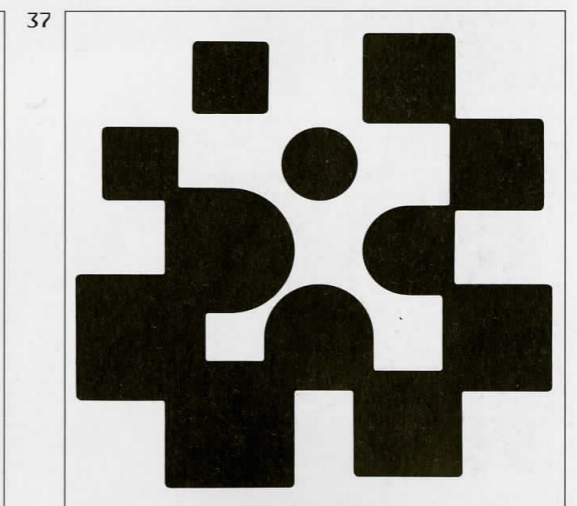
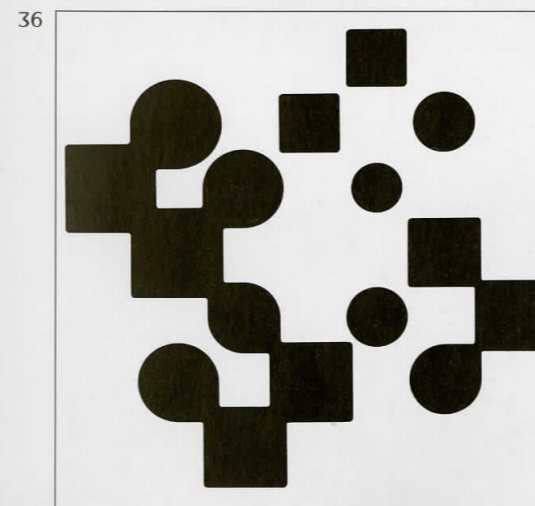
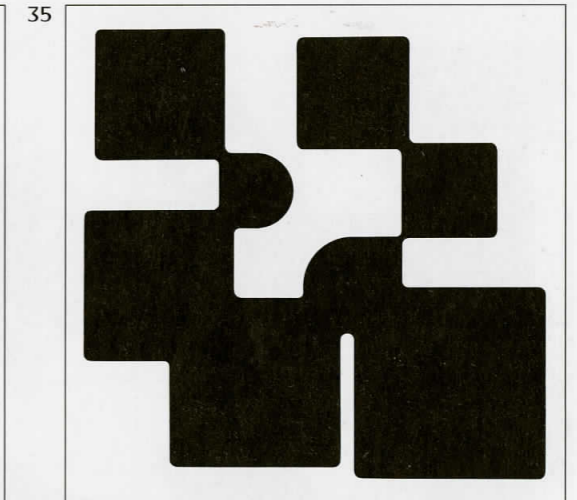
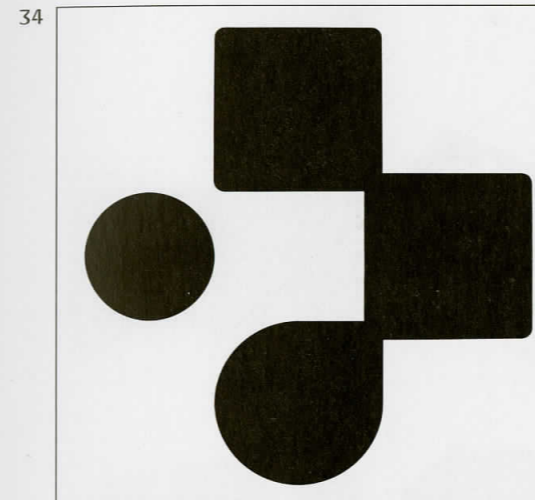
Designing programmes means finding a generally valid principle of integrated arrangement. This applies not only to typography (a predestined application in any case) or – going farther afield – to the realm of geometry. It applies without any restriction to the realm of the visual. Without restriction because all the elements are programmable periodically, i.e. at will. There is no dimension, proportion, form; no colour, which cannot be constantly led over into another. All the elements occur in series, or better, in groups.

The same applies in the realm of the acoustic, in music. Language is different, because the elements have not been produced naturally but artificially. Even if programming in literature is subject to restricted laws, it is still quite possible, Kutter's Programme for Berio.

The periodic demonstrated by the block screen: a light tone consists of small, black dots on a white surface; a dark tone is the reverse. Between them is the arithmetically exact grey tone: a checkerwork of black and white squares of equal size. Thus, from light to dark, the screen undergoes a transformation from circle to square to circle, in which process the form changes as steadily as the tone.

In the colour block there is the added fascination of the colour mixture: out of 4 colours (yellow-purple-cyan-black) all the colours can be produced periodically simply by manipulating the size of the half-tone screen dots.

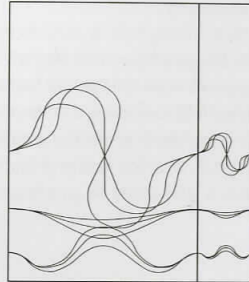
What could have been more logical than to take the screen itself as a sign programme for a block-making factory? Fig. 34: the minimum form declared to be a form is integrated into a larger whole in the other three examples (advertisement subjects).



Programme as commercial design

Problem: to design packs for three washing powders. It must be remembered that each of them has its own "brand personality" and yet they all belong to the same family. That is to say, a basic form must be found which allows the three variants to be sufficiently distinctive and at the same time sufficiently alike.

Programme: waves with a different pattern of crests and troughs and overlaps in each pack.



In addition a cumulative effect was wanted. Packs of washing powder are bought chiefly in self-service shops and must therefore make their own impact. Hence the poster-like "presence" had to be maximized: the three packs together had to add up to something more than just the sum of three packs.

Solution: The waves form a continuous pattern over the different packs. This occurs irrespective of whether the packs standing side by side are identical or different. It also occurs when the ends and faces of packs are placed side by side.

To say what goes without saying: this programme deals only with formal problems, the solution of which (in this instance) is without any intrinsic significance. What is crucial, of course, is that the formal programme should square with the psychological one. But that raises questions which we have not space enough to go into here.



Programme as computer graphics

The illustrations below show pictures from the series 201. They came into being in 1966 and are the work of Frieder Nake, who is per se a programmer at the computing centre of the Stuttgart Institute of Technology.

He writes: *Visual objects generated by computers and drawn by automatic drawing machines are solutions of aesthetic programmes which are written by human beings and implemented by machines.*

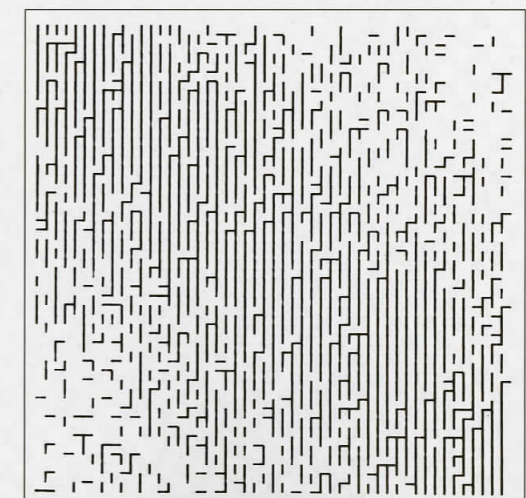
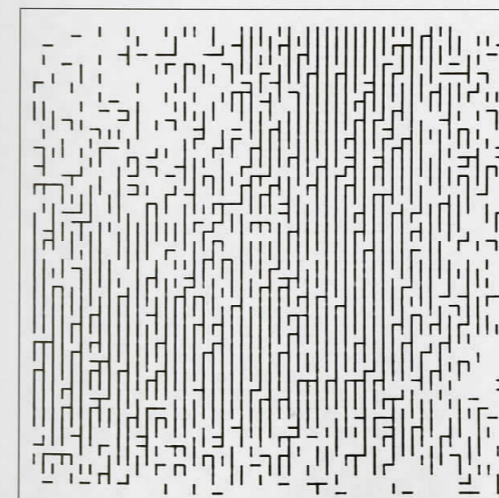
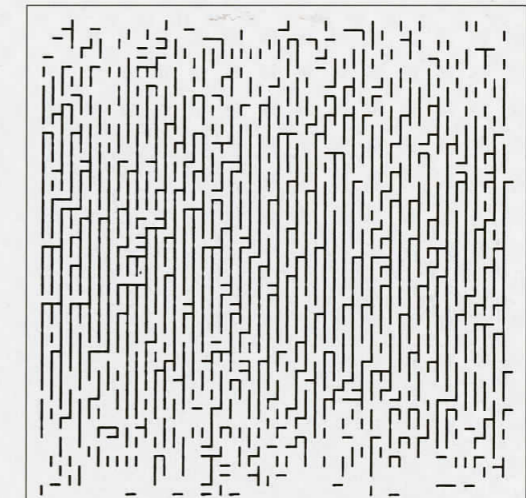
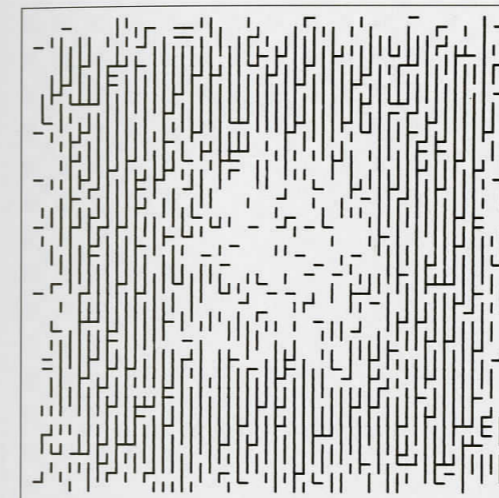
1. In a (more or less subjective) selection process, a person decides on a certain class of visual objects. In concrete terms this means: the elements are fixed which are to appear in the picture or pictures. In the examples below: horizontal or vertical lines of equal length.
2. He or others then formalize the problem radically so that it is suitable for the programming of an automatic production process in which man is involved simply in an ancillary and not a decisive capacity. This means

that all the concepts arising (colour, form, completion, selection, proximity, relation, tension, frequency, etc. ...) must be translated into mathematical language. When the problem has been formulated in mathematical terms, it is translated into a text which the computer can understand. This translation is the "programming of a computer". For this purpose a "programming language" is used, e.g. ALGOL 60. In this language we find sentences like:

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«for» i: = 1 «step» 1 «until» n «do»
«begin» x: = choose(mx, x1, x2); y: = Choose(my, y1, y2)
Z: = choose (mz, z1, z2); zeichne (x, y, z).
    
```

3. The programme is delivered and passed onto modern computers which, working in conjunction with drawing machines, ensure that the process is carried out automatically and deliver the finished visual object. The use of chance generators plays an important part in this process since they simulate imagination, variations and series formation. A programme can be repeated virtually as often as desired without the same result ever occurring twice. F. N.



Programme as movement

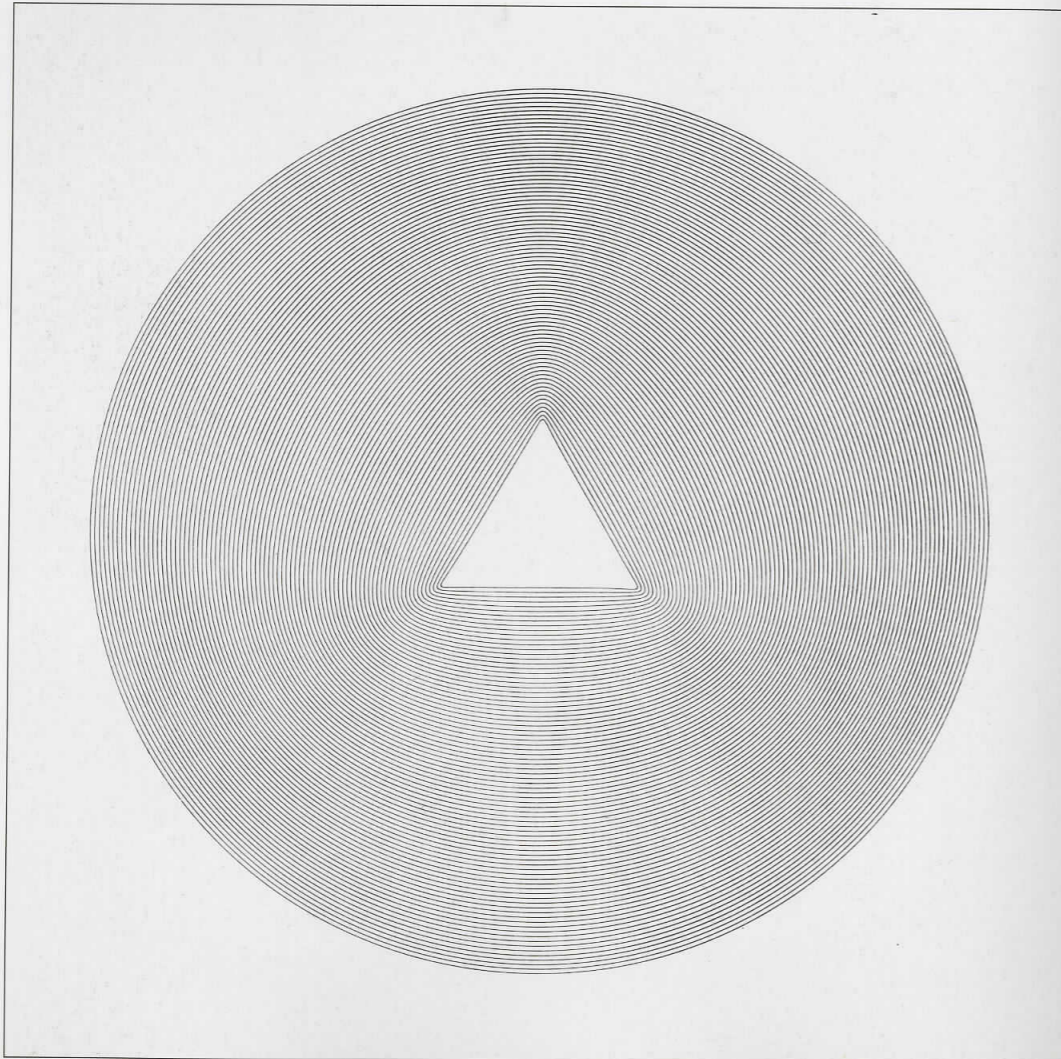
"All elements of the visual are periodic, i.e. capable of being programmed at will." I was glad to have an opportunity to write a commentary on this theme. The opportunity was offered by the periodical "Graphic Design", from which the following extracts are taken. I am, however, replacing the expression "periodic" by "continuous"; it is more apposite and precise.

Numbers are continuous: 1-2-3-4-5-6-7-8-9-10... The step between 1 and 2 is precisely the same size as that between 9 and 10. The steps can be refined ad lib.: 1-1.1-1.2... 2 without the step between 1 and 2 being altered. This truism about numbers is also true of colours: colours are of their nature continuous. A series from white to black, e.g. in ten steps, each step the same size as the next and the one preceding it. Here the question is not one of counting but one of measuring. What is measured is the distance between two points. Between white and black there may be ten steps, or two, or two hundred (the human eye

cannot distinguish more): a certain grey will always occupy the same place, an exactly intermediate shade of grey will occupy a place exactly in the centre between black and white, and so forth.

But not only white will pass over continuously into black but any colour into any other colour. Colours form a closed system. But not only colours but *all the elements of the visual are continuous*. Any form can pass over into any other, Any form of movement (a bird's flight for example) is a process of continuously changing forms, only in this case the change is "fluid". It is because any movement can be resolved back into single forms = phases that the film is possible: it consists of 24 static but continuous single pictures which, when projected, again create the illusion of movement.

I am indebted to Mitsuo Katsai, Tokyo, for an example of a continuous change in the field of elementary geometry: he caused a triangle to merge "imperceptibly" into a circle.



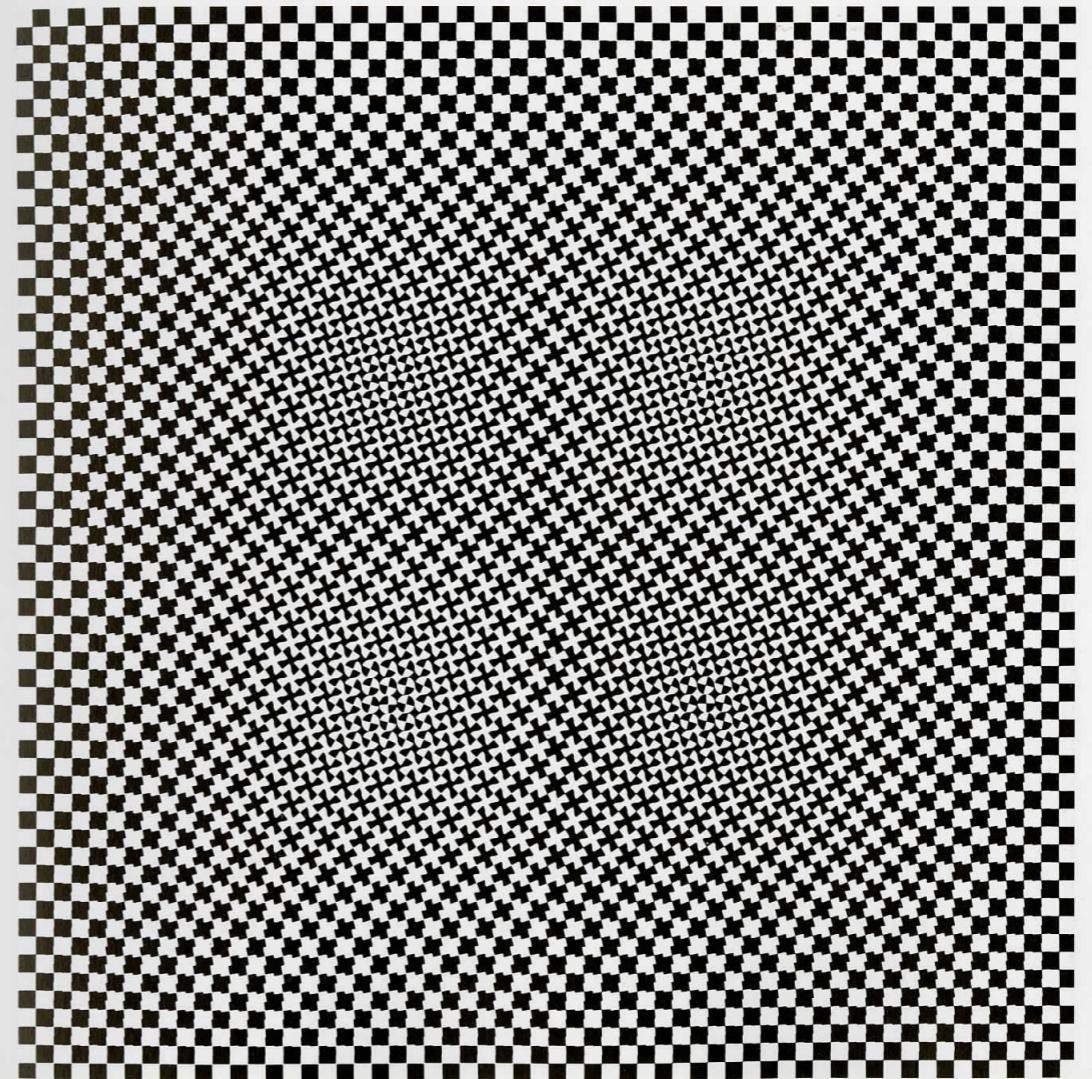
Programme as squaring the circle

The development of colour systems is the concern of scientists. There are also special theories of proportions, ornamentation and so forth. There is also a theory of form (by Wilhelm Ostwald, see p. 12). But there is no general system of forms and volumes. I do not know whether a system of correlating form and colour has ever been attempted. It seems strange that it should not have been when we remember that it is very largely through volumes, forms and colours that we experience the world. I think that continuity would occupy as central a position in such a system as in the system of colours. I will illustrate what I mean by taking an example "from life".

Any kind of growth can be conceived as movement, that is to say a change of form and colour in the smallest steps. Now, out of a white egg develops a black tad pole, from which a green frog develops. The beginning and the end of this process are different, very different. But the intermediate steps cannot be

directly perceived. Why not? Precisely because the development is a continuous one. But "constancy" is not the same thing as "continuity". The circle/triangle figure is continuous, to be sure, but is not constant. I would say that the steps are larger near the triangle than near the circle. This is not a value judgment but emphasizes that both continuity and constancy are controllable at will. In this case as with all visual elements. There is not only a circle to be made into a triangle but also a circle to be squared, as careful examination of the work below will show.

(This, by the way, is an excerpt from a project I began ten years ago and shall probably never complete. I wanted to make an "optical torture room": a room with a round chequer design in which the pattern changes continuously in every possible way. Just as circles grow out of black-white squares here, so colours, volumes and textures arise in other variants.)



Programme as literature

or: Programme for Berio by Markus Kutter

It came about like this:

In his armchair on the balcony at Hegenheim (or over a glass in a hotel ?) Berio asked whether the lyrics writer could not write lyrics like this:

Few words. Simple words.
 But words which could be sung back-to-front
 and front-to-back
 Or even over one another.
 Or higgledy-piggledy.
 Or, of course, after one another.
 Now just a few words picked out.
 Now one beautiful word alone.
 Perhaps a long chain in which the links are continually
 rearranged.
 And it must make sense.
 And it must have atmosphere and sounds marvellous.

For example, for a woman's voice.
 (Because his wife Kathie sings so well),
 And so the lyrics writer had to try to write lyrics. Difficulty: the lyrics writer can only write with confidence in German. But the lyrics must be translatable, for example into English. So they must not be complicated.

The text scheme produced is at the foot of this page.
 This programme can be used in the following sequences:

Sequence a b c d e f g h i or e alone
 or a e i
 or a d g b e h c f i
 or g h i a b c f e d
 or a d e f i
 or c f i a d g h e b
 or c e g

or any sequence one cares to choose.
 I hope Berio will compose the programme before long;
 I should like to hear it – because of Kathie's beautiful
 voice!

| | | |
|--------------------|----------------|------------------|
| a | b | c |
| Give me | a few words | for a woman |
| d | e | f |
| to sing | a truth | that allows us |
| g | h | i |
| before night falls | without sorrow | to build a house |

Again: Programme as literature

The ultimate poem by Emmett Williams:
 What it amounts to is an eternal project, and, at least for most of us, eternity is more time than we have at our disposal for perfecting works of art. Besides, these days there are far more important things to achieve.

The procedure:

1. Choose 26 words by chance operations, or however you please.
2. Substitute these 26 words for the 26 letters of the alphabet, to form a working alphabet of words.
3. Choose a word or phrase (the shorter the better) as the first line of the poem.
4. For the letters of this word or phrase, substitute the corresponding word in the alphabet of words.
5. Repeat the process with the result of (4).
6. Continue the process.

In the 1966 version, I chose an alphabet of words which reflected some of my preoccupations upon returning to the United States after an absence of 17 years. For the first line of the poem I chose IBM, a tribute to the muse's assistant.

In the first substitution, these 3 letters yielded red up going in step (5), the 10 letters of these 3 words blossomed into

perilous like sex
 yes hotdogs
 evil jesus red black devil

The 46 letters of these 10 words in turn produced 46 words, these 46 words 215, these 215 words a 1050, and so on, quickly multiplying by thousands and millions.

To thicken the plot, and relieve the monotony, the alphabet of words shifts 25 times (the "a" word becomes the "b" word, etc.), so that there are 26 versions of the poem. Samples of the beginnings of 2 versions are shown below:

| | |
|--|---|
| IBM | IBM |
| RED UP GOING | QUIVERING NAKED ZULUS |
| PERILOUS LIKE SEX YES HOTDOGS EVIL JESUS RED BLACK EVIL | BLACK PERILOUS QUIVERING ACTION UP JESUS QUIVERING TICKLISH SEX TICKLISH DEATH OLD UP MONEY FEAR PERILOUS RED PERILOUS HOTDOGS |
| HOTDOGS LIKE PERILOUS RED KOOL JESUS YES ACTION KOOL RED TICKLISH LIKE ACTION LIKE DEATH NAKED LIKE ACTION OLD JESUS VIRGINS SEX JESUS EVIL ACTION LIKE EASY RED KOOL ZULUS LIKE ACTION YES ACTION PERILOUS LIKE SEX UP KOOL MONEY IDIOTS TICKLISH LIKE EASY RED KOOL | NAKED RED DEATH WHITE OLD GOING UP JESUS QUIVERING RED KOOL PERILOUS HOTDOGS BLACK PERILOUS QUIVERING ACTION UP JESUS QUIVERING TICKLISH DEATH WHITE COMING QUIVERING KOOL TICKLISH COMING KOOL EVIL UP HOTDOGS PERILOUS HOTDOGS BLACK PERILOUS QUIVERING ACTION UP JESUS QUIVERING TICKLISH SEX COMING QUIVERING WHITE OLD RED QUIVERING HOTDOGS LIKE JESUS MONEY YES COMING QUIVERING WHITE OLD RED QUIVERING HOTDOGS LIKE MONEY UP DEATH COMING LIKE TICKLISH OLD MONEY COMING KOOL ZULUS KOOL TICKLISH UP EASY IDIOTS UP DEATH JESUS GOING UP JESUS QUIVERING RED KOOL PERILOUS HOTDOGS JESUS UP MONEY GOING UP JESUS QUIVERING RED KOOL PERILOUS HOTDOGS LIKE KOOL COMING MONEY KOOL SEX HOTDOGS |

Programme as music

Variations I
by John Cage

for David Tudor, on his birthday (tardily), January 1958

Six squares of transparent material, one having points of 4 sizes: the 13 very small ones are single sounds; the 7 small but larger ones are 2 sounds; the 3 of greater size are 3 sounds; the 4 largest 4 or more sounds.

Pluralities are played together or as "constellations". In using pluralities, an equal number of the 5 other squares (having 5 lines each) are to be used for determinations, or equal number of positions, - each square having 8.

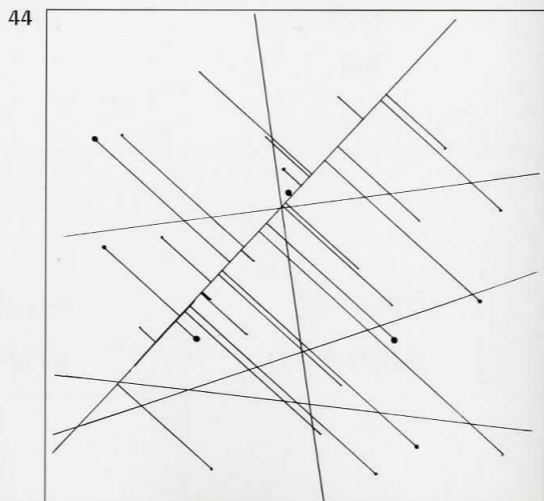
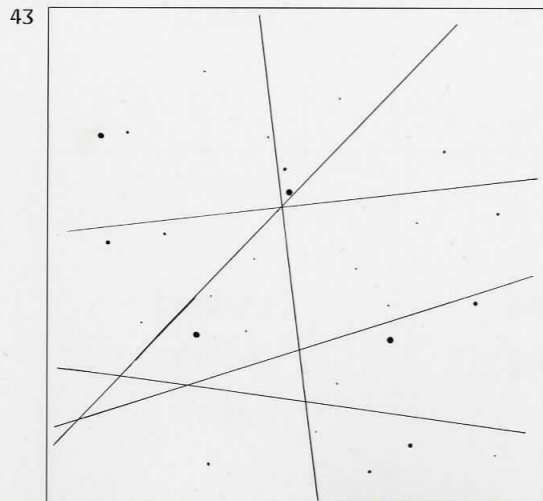
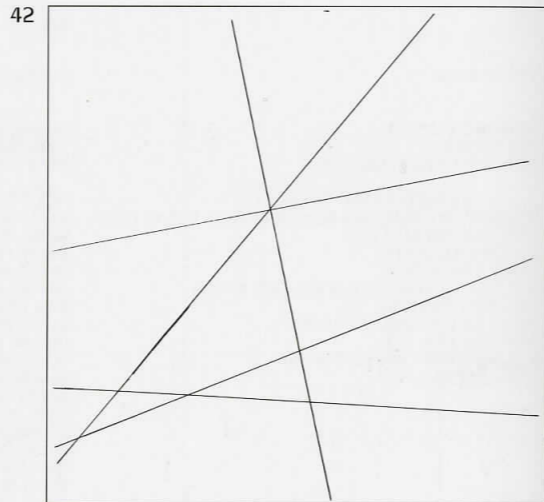
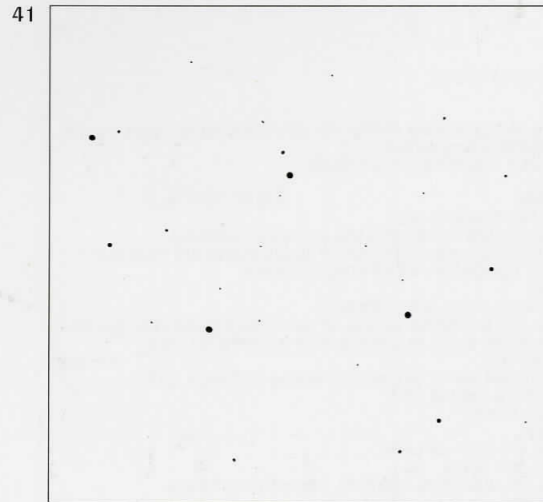
The 5 lines are: lowest frequency, simplest overtone structure, greatest amplitude, least duration, and earliest occurrence within a decided upon time.

Perpendiculars from points to lines give distances to be measured or simply observed. Any number of performers; any kind and number of instruments. J.C.

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Figs:

- 41 the square with dots,
- 42 one of the 5 squares with 5 lines,
- 43 the lined square placed over the dotted square and
- 44, the dots connected by perpendiculars to one of the lines.



Again: Programm as music

Nr. 14 "Plus Minus" by Karlheinz Stockhausen, 1963

Explanations:

1. There are 7 pages of notes and 7 pages of symbols.
2. One or several interpreters can realize one or several layers with these 14 pages. Up to 7 layers can be combined.
3. A page of symbols is to be applied to each page of notes.
4. Symbols in a square signify one musical event.
5. The symbol pages and their numbered events should follow each other continuously.

- ▼ short
 - ◆ medium
 - long
 - ? indeterminate
- "Akzidentien" (accessories to the Zentralklang) before, with the beginning, during and (or) with the end of the Zentralklang are indeterminate in pitch, but should match the register of the Zentralklang.

"Nebennoten" (secondary notes) correspond to the groups 1-6 on a note-page. They are used before, with the beginning, during and (or) with the end of the Zentralklang.

- ⤴ as fast as possible
- ⤵ accelerando
- ⤶ ritardando

○ "Zentralklang" (central sound) corresponds to one of the chords (I-VII) on a note-page.

6. There are 7 types of events.

entweder
either

oder
or

Programme as city planning

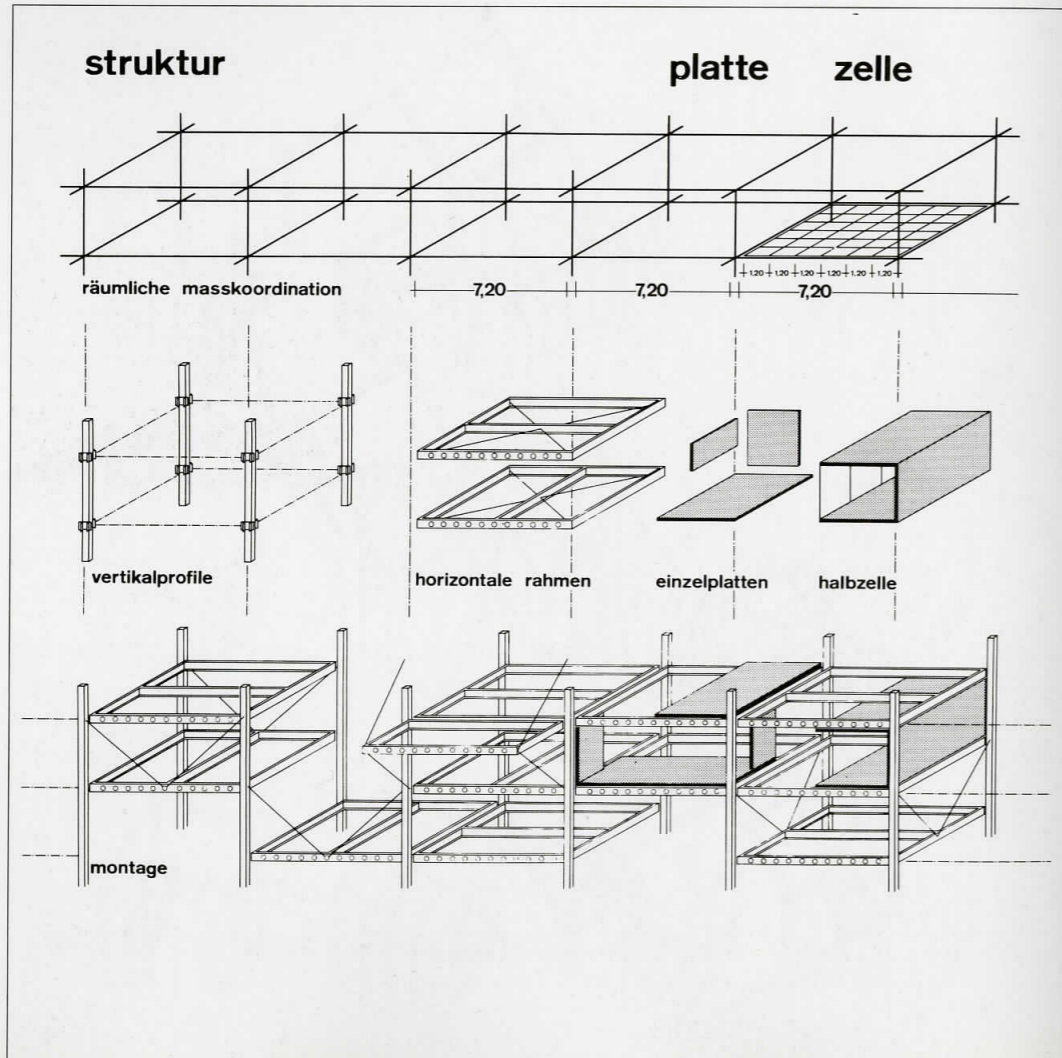
Extract from the periodical "Capital" (No. 3/1967):
At the beginning of April a helicopter will fly six plastic capsules to the grounds of the Otto Graf Institute of the Stuttgart Institute of Technology. This is the start of a new adventure in architecture: technicians, sociologists and psychologists will test what life is like in synthetic living units measuring 7.2x 3.6x2.8 metres.

Whole cities are to be erected with these plastic capsules. To this end three architects last summer founded the 'City Planning Systems Company for Research and Development Ltd.' in Wiesbaden. They are Rudolf Doernach, 38, formerly assistant to the famous American architect Buckminster Fuller; Hans-Joachim Lenz, 41, winner of the first prize in the competition for the Euratom Institute for Transuranic elements in Karlsruhe; and Eckhard Schulze-Fielitz, 38, Deubau prize winner of the City of Essen.

These wayout architects have discovered affinities between man's biological system and the living conditions he desires. The human system of bones/organs/brains is paralleled by the urban system of framework/living-unit/control.

City planner Rudolf Doernach has concrete ideas as to how such a dwelling system will look. He says: To start with, one buys one's living capsules for, say, 30,000 marks and hangs them up on the framework near the centre of the city. Later one can load them on a truck and take them to the quieter outskirts. At retirement, one loads one's living unit on a helicopter and flies it to Majorca.

The supporting framework for these living units will consist of steel or concrete posts and beams. Instead of renting flats or rooms, one will hire space in which to hang one's living unit as one wishes. 'There will be plenty of scope for variety,' architect Lenz promises us; 'for instance one room can be rigged out as a front garden'.



Programme as design for the future

"City planning systems" do more than just provide dwelling houses. "Paths and roads will also be incorporated in the supporting framework as the volume of traffic requires. All service mains such as hot and cold water, heating, power, telephones, antennae and drainage will run along the posts and beams."

The illustrations below show the system as projected for the University of Bochum. The upper picture clearly shows that even contingencies are programmed: the complete flexibility of the structure enables the university to be altered inwards and outwards in every direction as its various needs develop.

The example of this university clearly spells out the principle: "In this new conception of city planning man is no longer adapted to the layout of buildings and town but these are adapted to man." Doernach, Lenz and Schulze-Fielitz see their programme in the context of the complete urbanization of the earth.

Today 50% of humanity live in cities: by the end of the century the population of the earth will have developed and 90% of them will be urbanized. Population growth will be concentrated in existing megalopolises and agglomerations; small towns will decay; villages will become extinct.

Under the pressure of this development new social structures will come into being and these will find expression in new city planning programmes. Schulze-Fielitz: "Our task is the development and production of spatial city-planning programmes with the maximum possible adaptability." He believes that the density of utilization should be maximized not only for economic but also for psychological reasons: "To step up social intensity as a remedy against desocialization and to obviate the malaise of our new towns."

Above all it is mental and spiritual density that is involved: the city of the future is to be literally a framework, objective and neutral, into the voids of which individualized living space can be filled.

