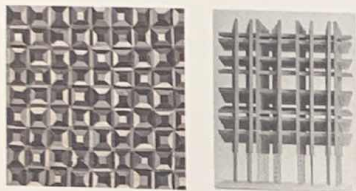


1952-1968

INVESTIGATIONS INTO PERCEPTIVE AMBIGUITIES. INSTRUMENTS FOR POLYSEMANTIC GRAMMARS: GRID, MODULE, STRUCTURE, PROGRAMME, ENVIRONMENT, CODE

Exhibited works, pp. 204-205, 211, 213,
217-219, 242, 255-256, 274-277



RECIPROCAL INFLUENCES BETWEEN COLOUR AND VOLUME

My intention is to analyse the relationships existing between colour and volume, or rather, to analyse the coloured surfaces determining a volume.

Indeed, from the very start my experiments showed that there are considerable reciprocal influences between volume and colour, which is why I believe it is necessary to examine this behaviour in a systematic manner.

In order to determine the colour of a volume, it's necessary to first identify the colour of the surfaces limiting the space enclosing that volume, given that it is conditioned by this.

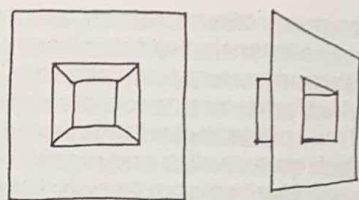
In the final analysis, this space will be the interior of a larger volume. For this reason, I will initially limit myself to analysing the internal surfaces of the larger volume, and then go on to gradually analyse the external surfaces of a random volume placed in the now familiar space.

I will use the following procedure for my analysis: after building a series of identical models representing a given volume, I will colour the internal surfaces in different ways. Next, I will compare them optically, listing on fact sheets the differences between identical volumes caused by the different colours of their internal surfaces. Lastly, I will apply the same colour to different volumes to see what changes this brings about.

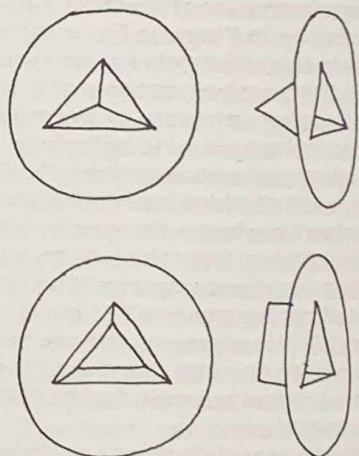
Observations are usually made in diffused light and adopting the same point of view.

The fact sheets will also contain notes on differences between surfaces with the same colour but with glossy or matt (i.e. light reflecting or absorbing) finishes.

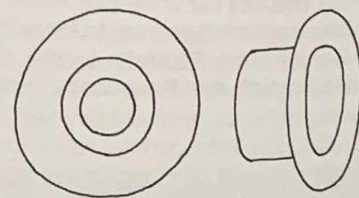
Series of observations: Comparison of models representing the interior of identical cubes with different colours. Naturally, this observation regards only 5 of the 6 faces of the cube because one face must be removed in order to allow the interior to be observed. To prevent my gaze from being distracted by elements outside the model, I will always place a kind of frame against the edges of the solid represented, on the same plane as the missing face.



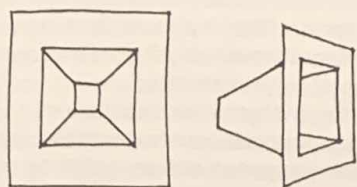
I will limit this first series of observations to the differences caused by the use of black and white. Next, I will use screens and volumes of this type in order to analyse the primary composed colours:



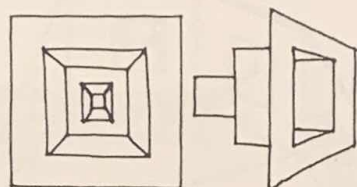
or of this type, to prevent the appearance of the edges graphically giving the idea of the volume, even without the use of colour:



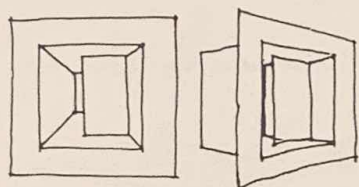
or through scenoplastic distortion to emphasise the graphic aspect of the edges:



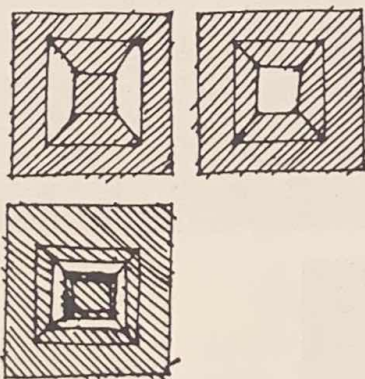
or like this:



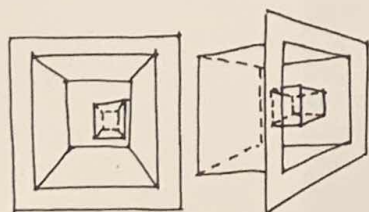
or like this:



Next I will make openings in the walls of the volume to observe the influences of light contrasts on colour and on volume:

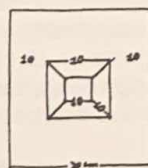


Lastly, as I mentioned above, I will place coloured volumes in spaces determined by coloured surfaces to carry out my analysis in depth:

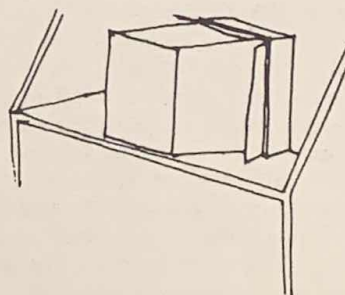
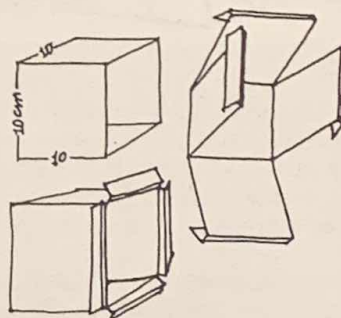
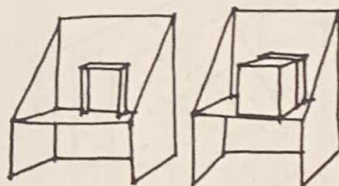
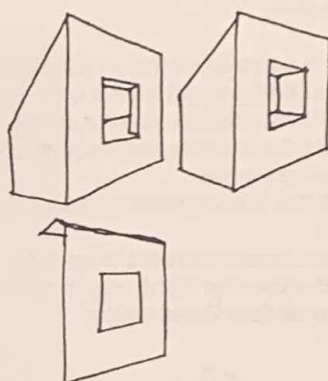


ON THE CONSTRUCTION OF THE MODELS REQUIRED FOR OBSERVATION

I built a first group of detached, identical models for my observations on the cube with the following characteristics:

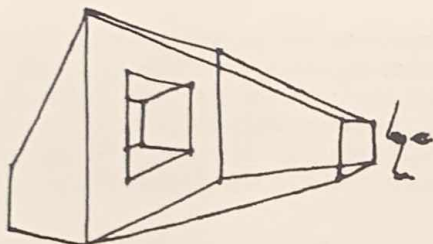


To facilitate and speed up colour changes, I decided to apply coloured paper filters. For ease of application, the models can be taken apart – that is, the empty volume can be detached from the frame. From now on, I will call these two components box and screen, respectively:



At this point, the problem of light – which needs to be as diffused as possible for my observations – has assumed great importance.

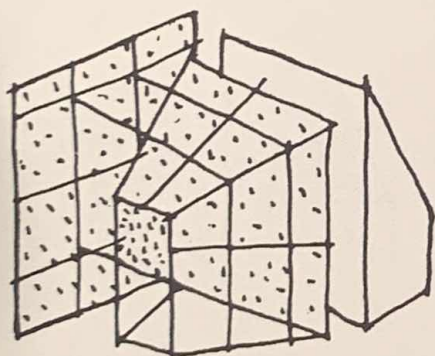
Initially, I intended to place the models in a room that already had diffused light. I thought if this proved inadequate, I could use mobile screens acting as reflectors, but this system was not precise enough. I then decided to build a kind of light chamber in front of the model that would cause the rays of light to converge evenly towards the box. I constructed the light chamber in the following way:



Based on a cone of vision of 30 degrees, I created a truncated pyramid frame with a wider base equal to the external perimeter of the screen of the models and a smaller base equal to the space between our two eyes.

I covered the frame with glossy, translucent white paper.

I used a structure to raise it up from the base level so that external light would filter into the interior from all four lined walls:



The light filtered into the chamber is constantly refracted due both to the inclination of the faces of the truncated pyramid and to the glossy reflecting surface, eliminating any diversity in tone and acquiring an almost uniform luminescence.

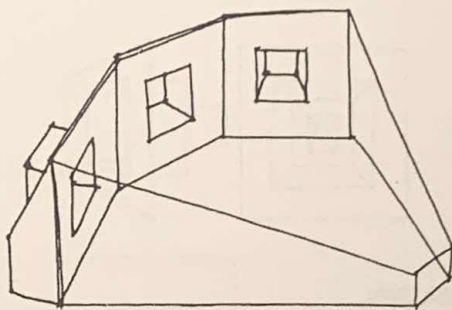
I then set up a screen at a certain distance from the chamber, which could possibly be tilted in case of unilateral, excessive light.

Another problem also emerged: when I compared the two models, there was a brief time lapse between my observation of the first and second. This was due both to my movement from one position to another and to the movement of the light chamber.

During this albeit brief period of time, the observer would forget some of the differences between the two models – especially minor differences – and even when he didn't forget, he may have remembered them incorrectly.

I therefore designed a new model, now under construction, that will overcome the drawbacks of my first experiments and will allow further modifications to take place rapidly. Its distinguishing characteristic is that it allows three models to be observed simultaneously from the same point of view, without any distortion.

Moreover, with the exception of the overall framework, all portions can be taken apart so as to allow every type of observation to be carried out.



• E. Mari, *Appunti per una tesi al primo anno dell'Accademia di Brera*, 1952.

Research as verification

When used in the sense of aesthetic research, the term "research" refers to operations intended to verify perceptive phenomena and to identify and try out language modes aimed at optimising means of communication. This kind of research is carried out by means of examples or models, adopting a partially intuitive approach.

Some types of research are key to an overall understanding of perceptive phenomena and are therefore useful for the objectification of expressive language: I'm referring to research carried out on the perceptive ambiguity of three-dimensional interior (environmental) space, because it

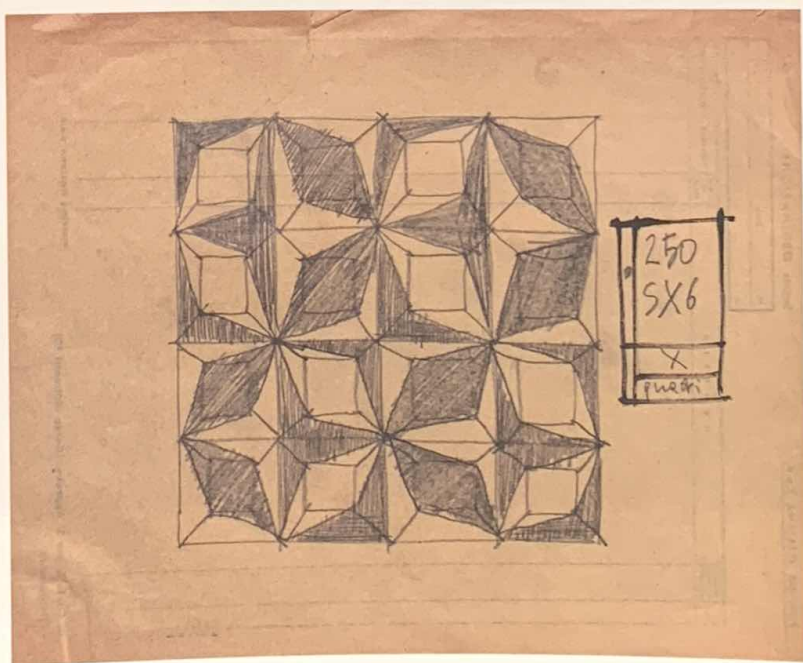
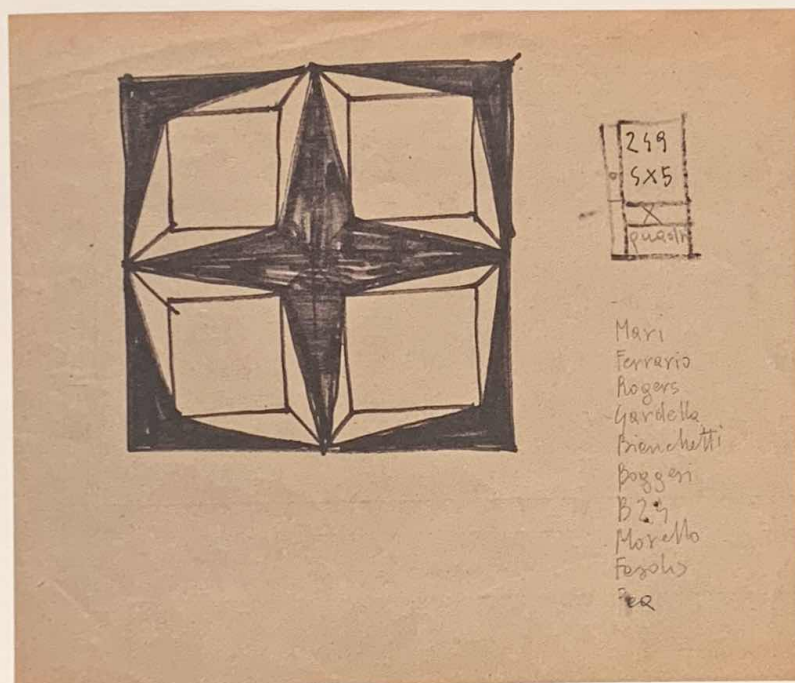
involves the way we relate to our surroundings; and research carried out on the analogy between the serial structuring of natural phenomena and the programming of perceptive phenomena, because all the possibilities of language – including formal language – are implicit in these relations at a structural level.

For this reason, beginning in 1952 and until the present day, I have been carrying out these two types of research separately and reciprocally integrating the outcomes.

● E. Mari, *Funzione della ricerca estetica* (Milan: Edizioni di Comunità, 1970).

1956. Study for *Structure 249*, graphite, Indian ink, ink and felt-tip pen on paper, 220 x 254 mm. Archivio E. Mari, City of Milan, CASVA

1956. Study for *Structure 250*, graphite and felt-tip pen on paper, 220 x 280 mm. Archivio E. Mari, City of Milan, CASVA



Perceptive ambiguity of three-dimensional internal space

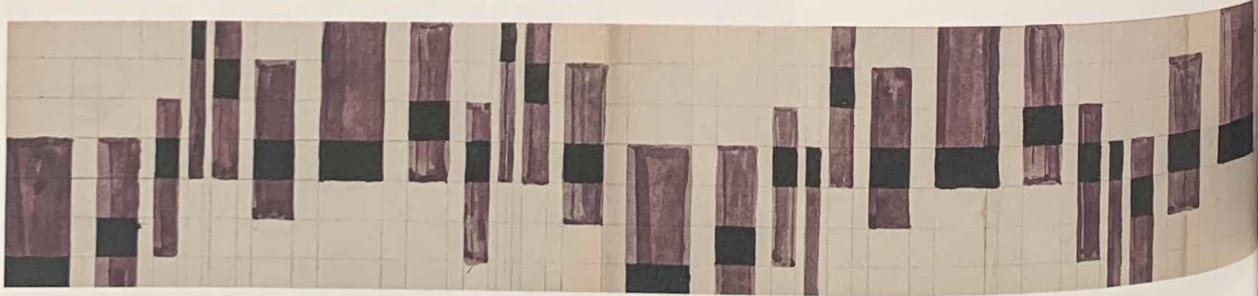
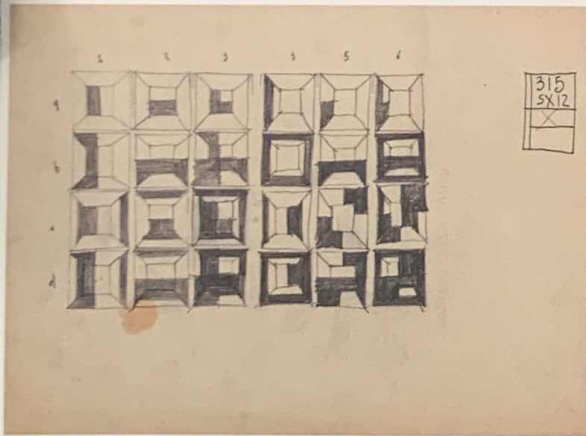
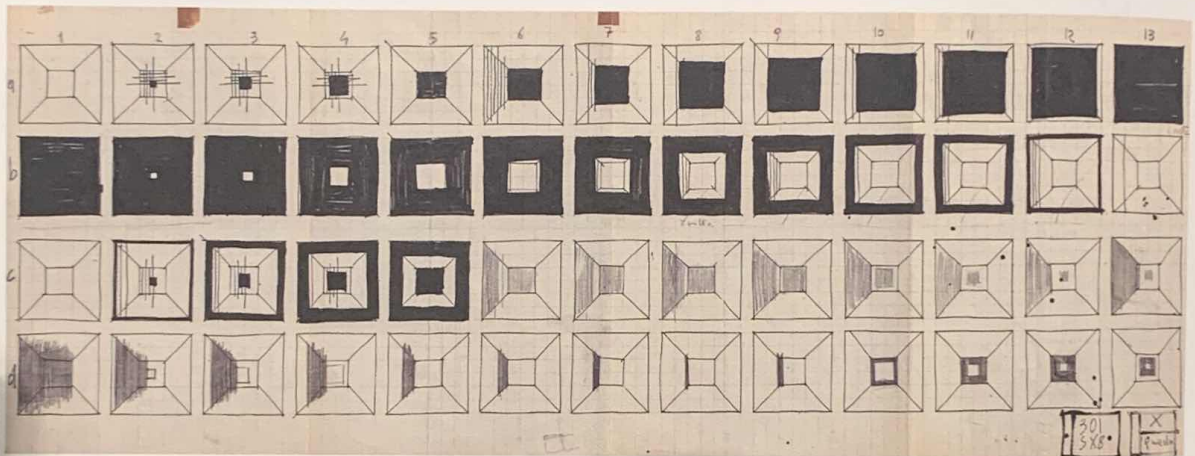
The perception of three-dimensional space (in the sense of environment) is one of the most ambiguous, because its comprehension can only result from the complex interrelations between messages that are received differently by our body's various senses. All the more so because each specific form of knowledge is almost always defined by one single sense, integrated only by the memories of the experiences of the others. As a result, the perception of depth is never direct but always reconstructed only by means of hy-

potheses and therefore accomplished phenomenally on different levels of reality. These premises suggest different types of research, which are exemplified and verified through models that are scaled down for practical and economic reasons. Nonetheless, the observation of sequences of variations (programmed within series of originally identical models intended for comparison) determines an ordered sequence of visual memories that flow into an overall perception, albeit maintaining their individual characteristics. We therefore have the capacity to receive discrete phenomena as a whole.

1956. *Structure 301*, colour-volume comparison diagrams, graphite, Indian ink and felt-tip pen on paper, 280 x 735 mm. Archivio E. Mari, City of Milan, CASVA

1957. Study for *Structure 315*, graphite and Indian Ink on paper, 223 x 302 mm. Archivio E. Mari, City of Milan, CASVA

1953. Study for *Structure 114*, graphite and felt-tip pen on carboard, 140 x 1408 mm. Archivio E. Mari, City of Milan, CASVA



Almost all of the models are made up of series of cubic spaces, since their structural simplicity facilitates the reception of variations, which is evidently also influenced by our urban conditioning.

● E. Mari, *Funzione della ricerca estetica* (Milan: Edizioni di Comunità, 1970).

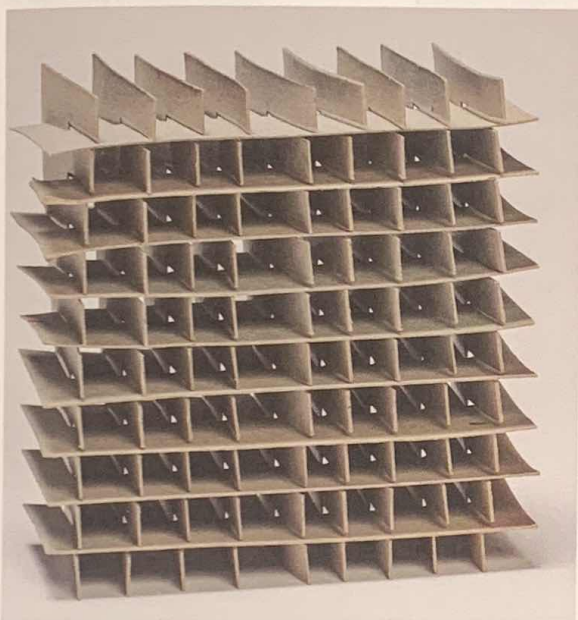
Relations of depth or dimension

By varying the depth of a three-dimensional space, we also vary its environmental perception.

This premise gave rise to a research project that led to two types of exemplification: one type used a number of originally identical models with progressively different depths while the other adopted a single depth for groups of models with identical heights and widths that became proportionally and progressively different. In some cases both characteristics were combined.

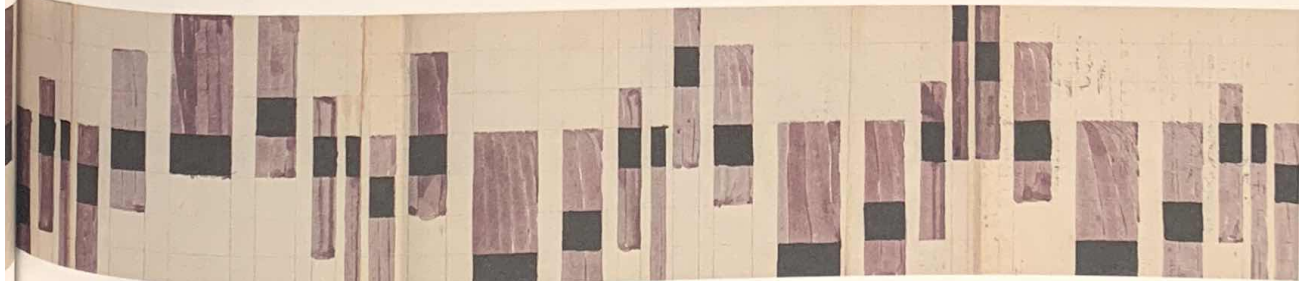
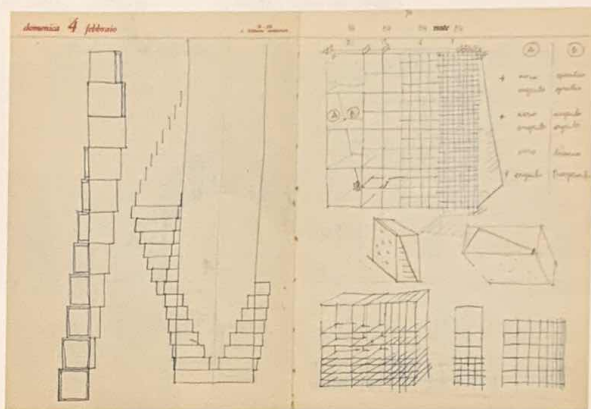
Beyond the observation of single phenomenal variations, we also acquired overall images re-

Early 1960s. *Structure programming model*, cardboard, 80 x 150 x 150 mm. Archivio E. Mari, City of Milan, CASVA



Early 1960s. *Notes for Structure programmes*, graphite and ink on reused paper, 234 x 336 mm.

Archivio E. Mari, City of Milan, CASVA



ceived as if they were images of a single environment experienced and measured in a temporal succession.

Such images always imply the observer's adopting an identical point of view for each model. This can be resolved either by looking at the models separately and then combining the individual visual memories, or by means of an overall model where the single cavities are arranged in a spherical dome with the observer at its centre.

For various reasons (not least, reasons of cost), the various series of models were arranged on flat surfaces.

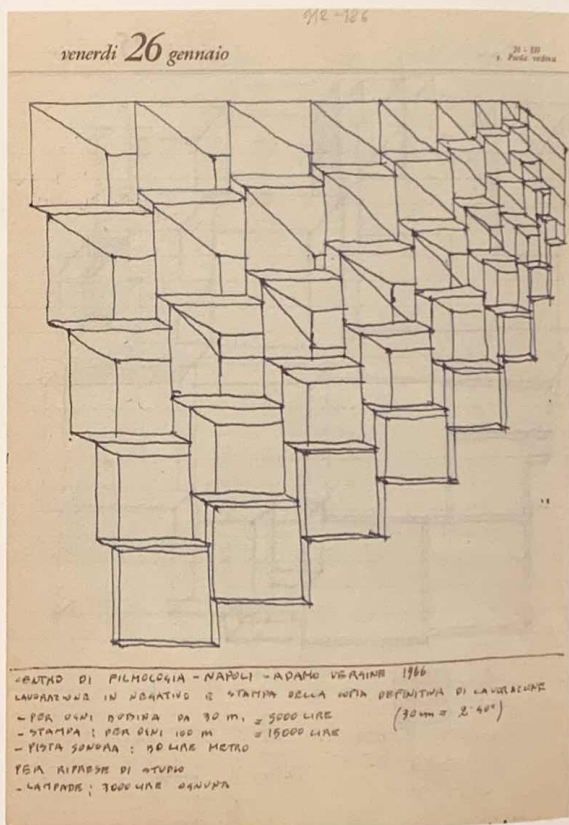
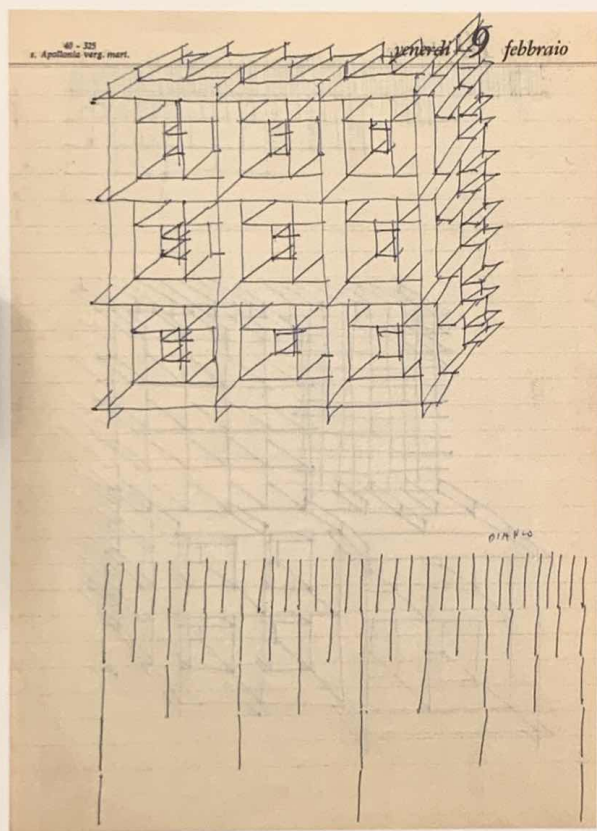
Observers who intend to carry out an overall (non-memorised) vision receive images with different perspectives, given that the points of view are always different for every single model and the internal walls present themselves successively with different dimensions.

This reading too offers an overall perception of space similar to the one presented initially, that is, the reception of a single space experienced and measured in temporal succession.

Rather than resolving the perceptive ambiguity, the simultaneous reading of two phenomena that are similar but not identical – because measured

Early 1960s, *Notes for Structure programmes*, ink on reused paper, 234 x 168 mm. E Archivio E. Mari, City of Milan, CASVA

Early 1960s. *Notes for Structure programmes* (912-926), graphite and ink on reused paper, 234 x 172 mm. Archivio E. Mari, City of Milan, CASVA



by means of different parameters – tends to amplify its margins.

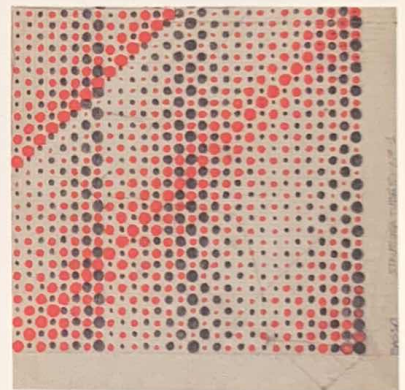
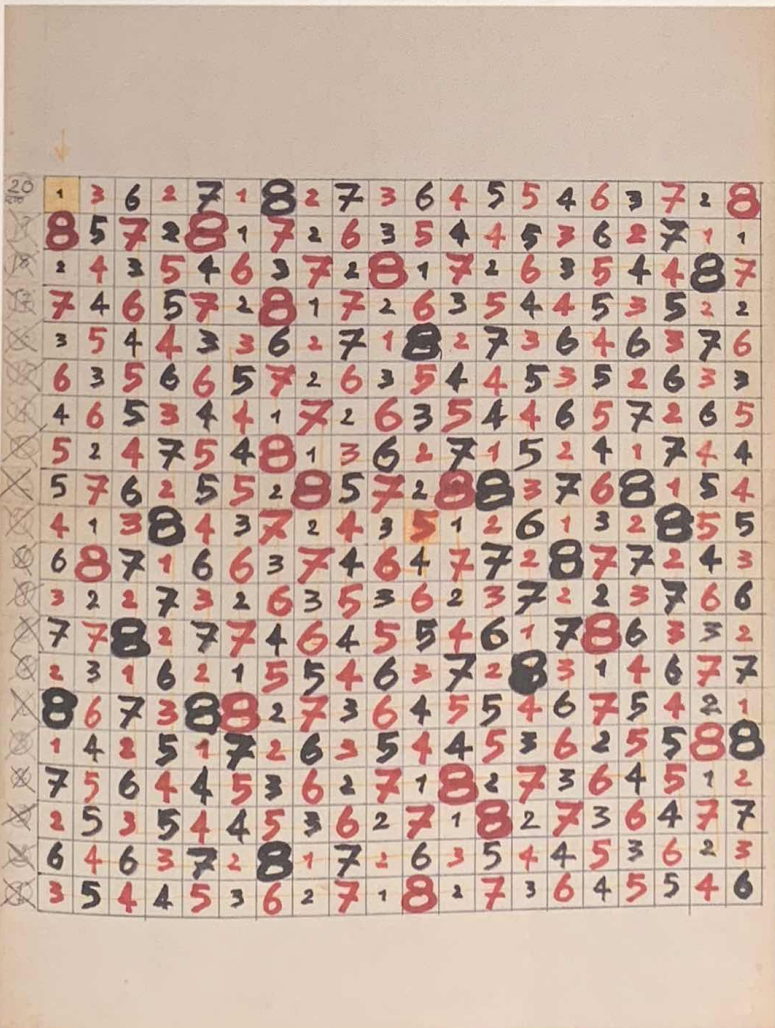
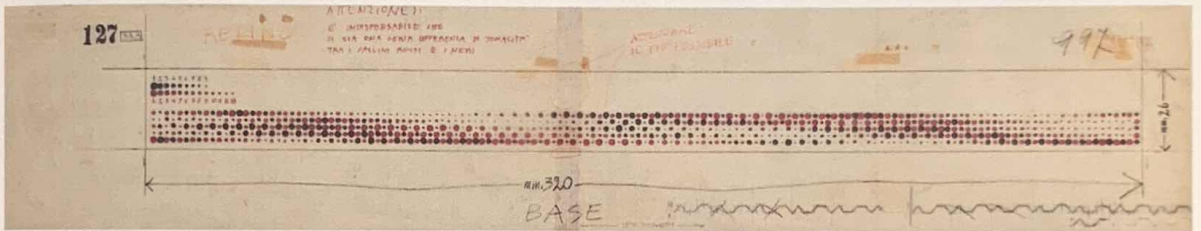
This leads to two research approaches: one tending to reduce ambiguity by measuring it as single observations progress, the other increasing it by making the different phenomenal characteristics overlap with overall observations.

● E. Mari, *Funzione della ricerca estetica* (Milan: Edizioni di Comunità, 1970).

1965. Early studies for *Structure 795*, graphite and coloured pencil on paper and tracing paper, 145 x 725 mm. Archivio E. Mari, City of Milan, CASVA

1965. Study for *Structure 793*, graphite and felt-tip pen on paper, 455 x 352 mm. Archivio E. Mari, City of Milan, CASVA

1965. Study for the *Structure 795* programme, graphite, pencil and ink on paper, 199 x 202 mm. Archivio E. Mari, City of Milan



Since 1953, I have carried out research by means of exemplifications that are guided by these reflections.

In this case, the research exemplifications presented are structured as follows:

A series of identical elements gradually fills – ranging from a minimum to a maximum – the cavities in a grid of cells with an identical volume. The elements, arranged according to an ascending and descending sequence that always remains the same, fill the entire grid following a continuous progression (for example, a spiral).

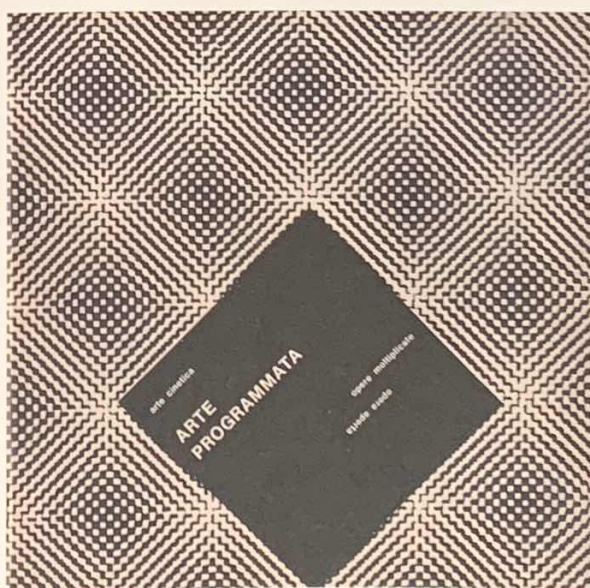
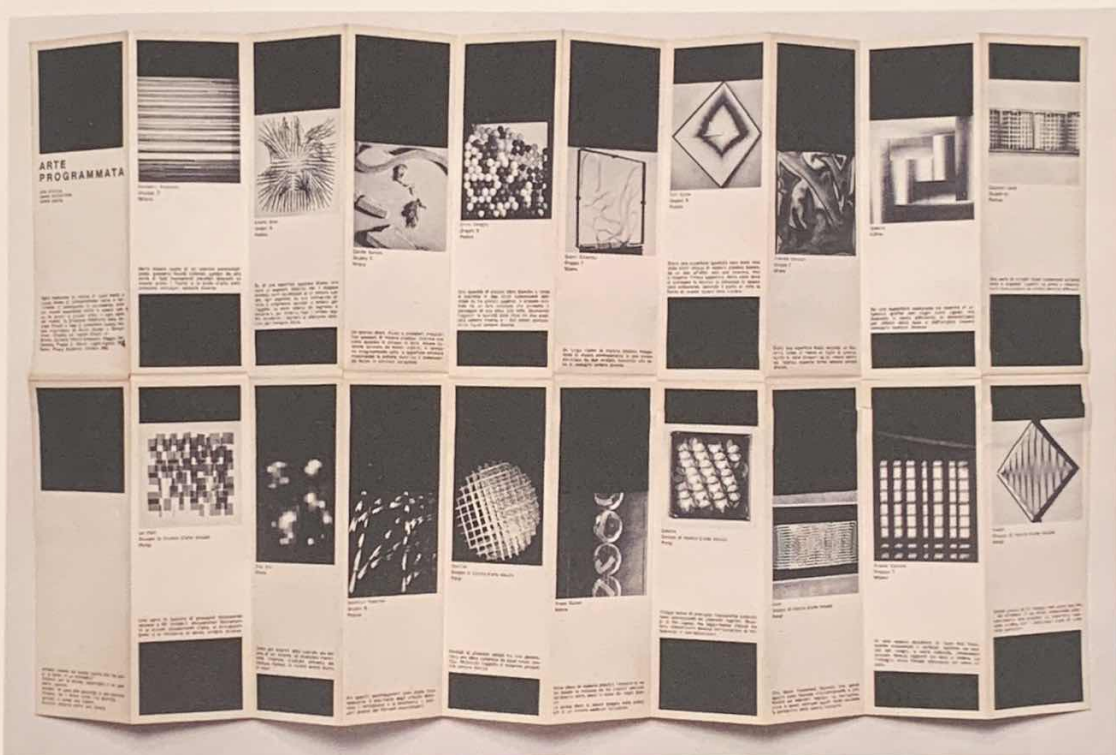
The variable is provided by the changing ratio

between the lengths of each section of the descending-ascending series and those of the groups of cells to be filled, given that these vary as the grid gradually fills up. The result is a structure with constantly changing thematic variations, which are legible in all directions. The progression chosen and the resulting variables thus determine the individuality of each structure.

Clearly there are a huge number of sequences and possible variables, and it is not necessary to exemplify them all, either by constructing different structures or by building one with kinetic properties.

1962. Leaflet catalogue of the *Arte programmata. Arte cinetica. Opere moltiplicate. Opera aperta* exhibition held at the Olivetti shops in Milan, Venice and Rome, printed coated paper, 192 x 68 mm (open: 380 x 675 mm). Archivio E. Mari, City of Milan, CASVA

1962. *Arte programmata. Arte cinetica. Opere moltiplicate. Opera aperta* (Milan: Officine d'Arte Grafica A. Lucini e C.), catalogue of the exhibition held at the Olivetti shops in Milan, Venice and Rome, printed coated paper, saddle-stitch binding, 207 x 207 mm. Archivio E. Mari, City of Milan, CASVA



Having randomly selected a type of modular organisation, my task is limited to the more or less intuitive choice of the type of sequence. Should the result not provide the desired degree of aesthetic information, I never seek to correct or partially modify the variable but change it completely and restructure the exemplification.

● E. Mari, introduction to the catalogue of the exhibition held at Centro Arte Viva, Libreria Feltrinelli, Trieste, 1966.

1957. Invitation card to the exhibition *Esperimenti colore-volume* held at Studio B24, Milan, printed card, 100 x 100 mm (open: 50 x 102 x 100 mm). Archivio E. Mari, City of Milan, CASVA

1959. M. Bill, B. Munari, *Enzo Mari* (Milan: Muggiani), paperback with multiple enclosed: *Struttura 463*, 150 x 150 mm (open: 75 x 150 x 150 mm). Archivio E. Mari, City of Milan, CASVA



1967. Brochure for the *Enzo Mari* exhibition held at Studio 2B, Bergamo, printed coated paper, 124 x 190 mm (open: 495 x 190 mm). Archivio E. Mari, City of Milan, CASVA

1966. Brochure for the *Enzo Mari* exhibition held at Centro Arte Viva, Libreria Feltrinelli, Trieste, printed card, 152 x 152 mm (open: 440 x 448 mm). Archivio E. Mari, City of Milan, CASVA

