Internal Variations of Perceptual Image in Serial Drawings: A Problem of Identity in Perceptual Process.

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Abstract:

An experiment was made about the persistence in the memory of the perceived images when they had been manipulated by means of the drawing. In the experiment a series of subjects with differentiated abilities for the representation made successive series of drawings on an image displayed to them. A registry became of the time inverted in the development of the task, that revealed that as it were to wait for, in each successive drawing the inverted time diminished remarkably, but as finding were that the image manipulated by means of this procedure did not remain in the memory of the subjects identical to which it had been drawn, arising a surprise sensation from in the subjects in front of the image.

From this experience an investigation arose on the persistence of the image in the memory when an artistic work is carried out, derives from the experiment made a reflection about the differences in the creative process of the phenomenon from the persistence of geometry from the image in computer memory during the artistic work, as similar to the artistic work that uses the organic memory and analogical means of representation as the main resources for the work.

The materials from the experiment are exposed during the works. Such experiment was carried out in two phases: one in which a visual image was drawn and another one in which, in addition a tactile image was used. At this experiment the use of cognitive strategies for the memorization is conceived in such way, that later transform the image. Is it about the perception habits like the discovered ones during the accomplishment of spontaneous drawings in which the perceptual image uses order systems to fix the image which they are not present in which it is drawn, that comprises of a memorization strategy?

This work explores the representation capability and its potentiality to transform the memory, on the capacity for the artistic work to transform the artist's perceptual universe. This communication exposes the results about the experiment and their relation with the way in which the memory takes part in the perceptual act during the artistic experience when analogical or digital media are used to work over a visual material.

Statement of the problem and design of experiment.

After designing a series of experiences made in order to be behavior simulators of a designer in the exercise, were used to confirm the hypothesis that gave rise to the present research, but as often happens, the test, and simulation experience resulted in the enrichment of the body of this theoretical work, as well as revealing assumptions about perception and memory and how they operate during the synthesis of an architectural image. The assignment of a task became essential for the development of such tools, for this purpose, was used imitation of an object

observed. It adopted an attitude of observation as suggested by Gardner [1] to approach the study of levels of competence in carrying out a task; considering freedom involving the answers sought in the simulation, was preferred extensive monitoring attitudes form of execution, time involved in the resolution, background of the subject product characteristics, attitudes and responses to what occurred, and so on. Having in mind the pourpose to attract even more information than what could be achieved through a series of questions and answers to the intensive implementation of a test in the form of a survey.

One base which departed for the design of experiments, was the idea that a large part of the problem in the synthesis of the image could be understood from the designer's behavior during the execution of a task, and that the image represented was largely the strongest material source to observe this phenomenon in evolution. Both ideas led to the observation of subjects in action.

After the experiment, we proceeded to the products catalog for further analysis and interpretation. From the analysis of the physical structure of the scripts, and the subject's behavior in resolving the specific task, it was possible to infer general features for grouping data After the data interpretation it was possible to infer assumptions about the persistence of the images represented in memory.

Experiment.
We depart from the observation of the behavior of some designers who tend to draw in the object repeatedly to go gradually learning it, and how by this behavior the image centers in a particular "plastic territory", as that one that makes appearance in the plastic infant from dominant metaphors in the continuous work [1]. This behavior resulted in a number of questions: Does the repetition of a repeated image through drawing or modeling, produces an effect of loss of meaning or a transfiguration in the ultimate physical structure? How do the repeated execution times behave in the successive approximations? What influence does the physical material handling exercises in the realization of the final image? Do the successive approximations generate changes in the structure and the length of the represented image?

The test was structured in a document of 32 pages. This was divided into three parts, one of submission; Another part was used to record the personal data of the subject, and educational background on the practice of arts or crafts.

The second part of the test consisted of three pages; One of instructions for the form and another pollster, where the instructions were given and a piece where the observer was able to write down the series of measured times and make a few observations about the subject in study, his attitude , concentration, and so on, at the time for work. The third part of the test consisted of material to memorize, blank pages numbered in the upper right to catalog order in the implementation and subsequent question and answer sheets for each set of drawings. The material consisted of four non abstract figures to memorize; they were grouped into four categories: amorphous images (in the sense that brought Arnheim [2] or Ehrenzweig [3] as a fund gestalt free), pictures of objects of simple manufactured geometry, pictures and images of anthropomorphic objects and complex manufactured objects. Before applying this test was thought that an abstract object lead to a greater or faster encoding process than an amorphous object, and the persistence of their essential characteristics in memory would be higher, also that would have been more freedom to accommodate a known pattern to an amorphous object thus generating an image with a strong gestalt.

During the test, the subject was provided with the work papers and a pencil. The image to memorize was shown to the subject for a lapse of four minutes. The subject was told that the time referred before was the only opportunity to memorize, after that it was hiden from his sight to start the series of drawings. When the subject started another drawing he had to turn down the preious drawing and draw a new image from his memory. For each drawing the execution time was taken. The instrument used for that pourpose had four columns for the four sets of drawings and the necesary lines to record the starting and ending times for each drawing. One of the most important questions that arose as a result of the experimental observation and suggested one of the hypothesis of this work consisted in making the subject to watch the series of drawings, and then ask him/her to display the image he had seen and memorized at the beginning, then he was asked to tell if the image that he had kept in his memory corresponded to his display after he had repeatedly drawn it.

Study Group.
It was chosen to descart the variables associated with the development of the ability to build the environment [4]. The study group was composed by adults, college and post-college age. The experiment was carried out with volunteers and applied individually.

The study group was composed by 33 people: one industrial designer, one architect, five biologists, one linguist, two structural engineers, two architectural students, three athletes, four physical mathematics students, five law students, four surgeons, four civil engineers, and one industrial design student. In this group the subgroup of four people professionally involved in the design acted as a control measure for the variable occupation with respect to the variable coding measured by the runtime and structure of the shape produced, and the development of stroke.

The distribution by occupation and genre of the study group can be seen most clearly in the following table: (to keep the anonymity of the participants, the initials of their names were assigned to identify them).

Table 1. Study Group

Subject	Place of origin	Age	Occupation	Art practice or	Genre
GL	Colombia	29	Industrial Designer	a.v.	m
AA	Monterrey	32	Architect	a.v.	m
AR	Tapachula	26	Biologist	--	m
ED	Venezuela	30	Biologist	--	m
RA	Monterrey	24	Biologist	a.v.	f
RT	Monterrey	29	Biologist	m	m
GG	Monterrey	26	Biologist	a.v.	m
AN	México, D.F.	29	Linguist	lit	f
JN	México, D.F.	28	Mechanical Engineer	--	m
FC	Tampico	26	Mechanical Engineer	--	m
AT	Monterrey	19	Architecture student	m-a.v	f
LN	México, D.F.	17	Architecture student	a.v.	f
AV	Allende.N.L.	30	Sports	--	m
AS	Monterrey	21	Sports	m	m
AT	México, D.F.	21	Sports	m	f
MP	Reynosa	21	Physics student	--	f
LT	México.D.F.	18	Physics student	--	f
AC	Monterrey	19	Physics student	m	f
NG	Monterrey	22	Physics student	--	f
AM	Monterrey	21	Law student	m	f
AG	Monterrey	21	Law student	a.v.	f
GC	Saltillo	20	Law student	m	m
EP	Monterrey	21	Law student	m	m
MR	Monterrey	20	Law student	--	f

RM	Monterrey	45	MD	a.v.	m
EV	Monterrey	28	MD	a.v.-m	f
RG	Monterrey	25	MD	a.v.	f
DG	Matamoros	24	MD	a.v.-m	m
RB	Juárez, Chih.	30	Civil Engineer	--	m
AX	Monterrey	25	Civil Engineer	--	m
LN	Monterrey	38	Civil Engineer	m	f
LC	Monterrey	59	Civil Engineer	m	f
MN	México, D.F.	21	Industrial Design	a.v.	f

Description. Art practice or experience: a.v.: visual Arts, lit.: literary Arts, m: musical arts.
Genre: m: male, f: female.

Parameters for the analysis of the results.

In order to determine the parameters on which to make a codification of the results a first review of the material was made to find within it the unique and repetitive aspects in the structure of the configuration, in the stroke, the mode of attack on the chart or three-dimensional structure in the total structure of the series of drawings, in response to the stimulus, the response to the questions raised by the test and the series of times. There were some features that were coded using one letter, which was very useful, because in reviewing the information again with this base of analysis, could be assigned a sequence of letters to the responses of the subject which could quickly identify recurring response patterns of the group or patterns of recurrence in the same subject which could talk about trends in personal or group performance.

Parameters were grouped into three classes: features on the configuration, on the line and on the sequence of Configuration and Stroke overall.

Configuration parameters C.

L. This parameter indicates a choice of image represented in relation to the model; It can be seen by comparing the model with the representation or series of performances.

Y. Transposition of self-image from portray an image of him/her self, which can go even introduced gradually in a series of drawings, to the interpretation of parts of a picture drawn by their selves as parts of the body or face. This trend is related to the interpretation of stroke as inextricably linked to muscular movement.

S. This parameter can be seen as a survival or details of significant elements in the picture; This can be seen in the setting of only certain details of the stored image in the picture; it can also be understood from the analysis of the sequence as a survival (gradual forgetfulness of other details) certain features across the series of drawings.

T. Translating the poetic image. This parameter is the comment made during the execution of the design on a meaningful analogy with an image or suggestive atmosphere that arises at the time of execution of the simulator or during the observation of the model. Images such as the drawing of a rock suddenly for a subject suggested a indigenous spearhead or the same picture a Chinese landscape, illustrate this parameter.

T. Stroke parameters.

A. Affirmation of contour. This feature can be seen in the tendency to use a line like defining the format, as opposed to the use of shadows and textures as a defining pattern. It can be understood from a parameter sequence (Q or B), as a gradual approach to the definition of a contour drawing from one continuous or discontinuous or the tendency to "cleanse" shadow drawing as the subject moves into the stream.

R. Rupture of contour, is manifested as a tendency to make discontinuous line defining contour (as opposed to A), or work to achieve the texture in order to define the drawing figure. Just as in A, this parameter can be understood from the analysis of the sequence.

SC. Parameters sequence in the structure configuration.
Ss. It can be a analysis parameter of the configuration, but when the subscript s is added, it indicates a trend to survival of some significant details in the drawn sequence from the gradual removal of peripheral details until gradual focus over certain details. Undoubtedly an analogy of this parameter with the "plastic territory" as noticed by Gardner [1] can be drawn as a typical behavior in dealing with a piece of work.

C. Very codified drawing. A gradual trend to reproduce a formal reduced pattern to a constant feature; this parameter has a lot of connection with the gradual clearing of textures and shading and gradual contour affirmation; sometimes it runs parallel with a thickening of the line that defines the contour even the pressure increases to draw (increased tone in the stroke), this may be related to the gradual sense of certainty in the definition of the mental image.

N. Unlike C, this parameter defines a tendency not to encode the image, this parameter has a lot of connection with L., it can be noticed as associated with rotations in the series of drawings.

D. Tendency to symmetry. In this feature is notorious the gradual alignment pattern with respect to an axis of symmetry, providing parts forming an axial balance and / or focusing on the medium (paper or work table).

J. Tendency to assymmetry. Contrary to the tendency earlier described, in the series of drawings the parts balance with respect to the axis of symmetry get gradually lost. This parameter can be closely related to a freedom in the stroke, with the breakdown of contour or the tendency to rotate and move the object in the sequence; From there it keeps a very close relationship with the almost physical image.

F. Survival of all the details. This parameter, which is linked to the very encoded picture (C) or with the assertion contour (A) points to the almost exact repetition of the image in the entire sequence.°

P. Gradual Loss of details and gain of peripheral structures, such as stroke and shade patterns apparently encoded. This parameter is extremely rare, usually occurs in the sense of a gradual consolidation. It could be related to a dissipation of attention or tiredness for a job very monotonous.

U. Enriching the sequence by introducing new details. This parameter is strongly associated with J and their relative dependents. It is interesting to associate it to the tendency to spining or rotation in the sequence; although it may be - and perhaps more significantly- associated to sets that do not show a rotation or movement as explicit subject`s attempt.

Z. Changes of the image orientation. In some cases a shift in the image as shown on the mirror can be seen at the time of drawing. It is an extremely rare parameter and is not very likely to find connections with other parameters; although it might be related to events in the emotional development of the individual [5].

O. Survival of the composition structure: this parameter is linked to a tendency towards representation in abstract (X) may be closely related to the way of observing the figure, learnig from the formal structure reduced to linear patterns until the vision of the details. This phenomenon could have strong implications with the subject's

education, though, as it was able to show Marr [6], it could be very involved with the perception mechanics.

K. Juxtaposition of secondary images. This parameter can be seen when the original image was superimposed witth spontaneous images (perhaps closely associated to the subject) as important suggestions to the drawing. This parameter can be directly associated to the transposition of the image itself (Y).

ST. Sequence structure of stroke parameters.

I. No differential -encoded. This trend is characterized by the progressive definition of a boundary formed by patterns of spots or shade strokes and texture to an apparently accidental contour formed by a thickened line and is made making even more pressure on the paper. This parameter is closely related to the assertion of contour. Wt-coded undifferentiated. Although this parameter is extremely rare, it almost always occurs in the opposite direction, it may be seen a gradual breakdown of contour towards strokes seemingly senseless. This parameter might be associated to the loss of center into significant detail (P).

Q. In a sense very close to the previous one, this parameter is given, where the stroke texture is beating force to stroke contour.

B. Texture - Contour. This parameter is exactly opposite to the previous one.

E. Affirmation- contour break off. It indicates the gradual loss of continuity in the contours of the represented image. It should be noted that it is extremely rare.

General Stream parameters.

M. Handling-Movement. This parameter defines the sequence in which the movement to the image was given in a sense of rotating or showing it from different points of view.

X. Realistic - abstract Representation. This parameter group deals with the whole trends ranging from a representation that is very close to the real representation where distinctive traits and shape details are becoming increasingly a graphic feature of a direct evocation of the real. This parameter may be associated to the tendency of a gradual stroke contention with a clean contour drawing stroke shade and texture.

W. From abstract to realistic representation tendency. It has also been possible to observe a tendency to represent a structure composed of linear strokes to reach a close definition to the real. However, this parameter is extremely rare. It could be associated to an enrichment of the image (U).

V. The tendency to manipulation or motion (M) may have two alternatives, which it are to show a view of the object without any order that denote a rotation (as a sequence of common plant and elevations for example) and G. turning the object in which a numerical sequence of the drawings is an effective rotation of the image. This parameter is closely linked to a state of concentration at work and a great satisfaction for it.

H. To this trend to movement, can be added a tendency to show zoom in or zoom out sequences of the represented image. In most cases it is an effect beyond the volunteer control. It may be related to the increasing dominance on the picture, or with the detailed exploration of the figure and its parts.

Ic. Trend to compositional balance. This parameter is characterized by a gradual accommodation of the image to the limits of paper.

Description of the experimental results.

After codifying the subjects' responses, and have made an analysis on individual cases, taking into account representing individual trends and responses, the next step was to proceed on making a count of the parameters found in the cases in order to determine if there are constant trends or recurrent appearance of the parameters and to verify the relationship between the viewed image and some response pattern. Series of individual times were emptied into graphics, grouping them by individual series of drawings (S1, S2, S3, S4) to identify general trends in the graphic associating them with execution times.

In series number one, there is a general trend toward a very strong representation on the move. This trend is significantly more common in this series than in the other three, in fact, the number of individuals who used this resource, progressing gradually decreases under the series. This trend suggests a very important fact: the direct manipulation of the object (as opposed to the observation of a photographic image) guides the subject in some way to replicate the experience of multiple visions. The subject's sensitivity has a lot to do in this: it was performed a test with two subjects where the researcher repeatedly asked them to reproduce a three-dimensional object in clay, following more or less the methodology of the test image playback, indicating them to make a direct modeling. The trend of the series clearly pointed to a gradual adaptation of the modeled shape to the hand shape, and a gradual trend towards portraying most significant accidents every time more organized with regard to a symmetricaly and orderly pattern; when the subjects were questioned about the memorized image and theiri identity with respect to the presented image, although they again touched and moved by repeating the inictial test recognition movements, they indicated that it was not the same object. This could bring in the sense of an image transformation from the one that was generated in the mind of the subject, but also points to the effect of confirming the Gardner's [1] assumption related to dependence of touch and sight in the spatial shaping patterns or even in the development of spatial thinking skills; apparently the direct touch points to a more vivid creation of a spatial entity, the fact that the obbject is manipulated might be an evidence of it.

There is a very strong trend towards a gradual alignment to an axis of symmetry, the survival of certain significant details, the gradual contour statement and a very strong trend towards a representation of a perfectly undifferentiated contour to one differential (I) all these features appear to guide the tendency of the configuration of the series to a consolidation and development of a formal pattern made from a constant script (as a letter), but the tendency to not encode (N) is stronger in this series, although in the other series against C dramatically decreases. This could bring in the sense of a challenge to establish a formal repetitive pattern which is on the absolutely amorphous model configuration. From another perspective, this could be interpreted as an opportunity, given the nature of the material, so that the free structures find their way into the piece of work, because of the low capacity of centering the gestalt image and the large number of the details that offers a varied form and texture as [3].

The trend of the different medium of the series of times but with wide variations is behaving in a general decline over the execution time of the first chart. Perhaps this trend is highly associated to the widespread tendency to appearing of simultaneous D I A and S parameters. It may be significant that most subjects did not recognize the model image as the one they had seen; this fact points to a transformation of the image induced by the use of the representation means.

The second series show a marked trend towards showing a sequence in motion, although not as marked as in the series one, as it was, could be related to the direct handling of volume. At this case, however, could be related to an assumed management sequence of the first phase, and not directly related to the characteristics of the model image; it is very significant that the tendency to low in the second installment of a frequency from 10 to 5 and then in the third and fourth sets from 4 to 1 consecutively. There is a tendency in some subjects, to go from an undifferentiated drawing to a completely differential drawing; At the same time, a similar trend to go from a more abstract representation of realism to a search for the shadow and texture representation.

There are three trends with a very high frequency of occurrence in relation to other parameters; a marked gradual alignment and composition of the figure predisposition with respect to an axis of symmetry, a trend repeated representation of the most significant details of the object , which sometimes becomes a reproduction of a simple geometric pattern; and a strong trend towards gradual affirmation of the contour of the object, which is reflected in the continuity of the growing profile and the gradual increase in force implementation of pencil on paper. The simultaneous appearance of these parameters, seems to foreshadow a marked tendency towards a highly codified drawing. The frequency of this parameter seems to be closely related to the widespread trend of the number of times to have an average decline. Apparently, there is a significant correlation between this parameter and behavior of the graphical times; In a sense, this might indicate the trend as well as individual gradual alignment of the series of times in a common line: that after a recurrence of a settled formal pattern, as many architects do when they be design, come into play coding image mechanisms which are inherent in the process of drawing and have small dependency on the pattern to be reproduced.

In the third and fourth sets, it is unclear how the parameters C, D and S, are highly recurring; Series times generally tend to decline over the execution time of the first drawing, but this trend is stronger in the number three in the series four.

A comparative analysis on the parameters shows a remarkable inclination towards consolidation in response to a repeated pattern drawing, although is a resourse less used to reproduce a pattern without a regular morphology. There is a strong trend towards a gradual alignment with the axis of symmetry, to portray just a few telling details and a gradual contour affirmation. This fact could confirm the trend pointed before, of promoting in the individual the use of encryption mechanisms of the image that tend toward abstraction of the image in an easily understandable pattern.

Two points stand out in this little analysis of the individual behavior that is typical in charts of series of time, indicating a declining influence what is taking shape as drawn as advances in reproduction pattern, as indicated by the gradual alignment of time demanded in making the drawing on a common line, covers at the same time to reproduce any pattern. This marks the gradual use of encryption mechanisms to solve the task. The other aspect was the subject's response when asked to recall after drawing the series, the model image and then compare it to the one presented to them. The typical response was not recognizing it even if and it was the same one. This indicates a change in the stored image that is inherent in the physical handling of the material and that is not related to trends toward consolidation or naturalistic representation: it has to do with a mind's tendency, with an interference of the creative imagination and the memory.

The phenomenon of the transformation and typical behavior of the graph of times can have a very significant correlation. A typical subjects' behavior at the time of

presenting an image to them and not recognize it, was not to believe at first that it was the original model and then showed disconcerted. As if in advance they waited for a response to find and when they did not find it, the feeling of truth crashed with a very different reality (See tables 2 and 3).

The general phases of the experiment were repeated using computer graphics media with three volunteers trained to draw using CAD and the participants' general responses were the same as using drawing or modeling. That is interesting, because it indicates a structural mind pattern that takes presence during the development of artistic work, independently of the nature of the used media.

Conclusions.

The drawing has properties that are inherent in the means by which the image materializes, images in memory suffer a gradual transformation induced by the work in which the artist is not conscious so, the naturalist art is a re-creation of what is real, and that makes the art created enter into the world as something else, a higher level of abstraction with each transaction is made on the art piece. In this process are important the natural encoding processes of images that the human being perform as a strategy to isolate the complexity of the world. This tends to be "cleansed" of non-essential factors, but at the same time, tends to manage through compositional strategies that make it increasingly symmetrical, abstract and with a more visually harmonious relationship with regard to the media in which the object exists, thus it becomes more efficient for perception.

This has important effects on the growing complexity of the artificial environment and the gradual displacement of the non-manufactured in the shape taken by humanized environments. Through this experiment, it was found that these abandonment processes of the initial models of inspiration for the design of new objects are processes that have strong unconscious components. It also could prove, through an approximation that the central Worringer's [7] thesis, with regard to the evolution of the graphic signs, from the naturalistic to abstract representation is correct, and that is a mechanism that causes varying complexity of represented degrees tend to be more alike among themselves given the use of the same resources to imagine that they heavily depend of the manipulation of the object by means of artistic work.

Table 2. Average draw times during the experiment.

X axis: Succesive Draw, Y axis: drawing time in seconds.

Table 3. Experimental results

Configuration parameters															
L.A choice of image	S-1														
represented in	S-2														
relation to the model	S-3														
	S-4														

Parameter		
Y. Transposition of self-image	S-1	
	S-2	▮ (blue)
	S-3	▮▮ (magenta)
	S-4	
S. survival or details of significant elements in the picture	S-1	▮▮▮▮▮▮▮▮▮▮▮ (red)
	S-2	▮▮▮▮▮▮▮▮ (blue)
	S-3	▮▮▮▮▮▮▮▮▮▮▮▮ (magenta)
	S-4	▮▮▮▮▮▮▮▮▮▮ (green)
T. Translating the poetic image	S-1	▮▮▮ (red)
	S-2	▮ (blue)
	S-3	▮ (magenta)
	S-4	▮▮ (green)

Stroke parameters

Parameter		
A. Affirmation of contour	S-1	▮▮▮▮ (red)
	S-2	▮▮▮▮▮ (blue)
	S-3	▮▮▮▮▮▮▮▮ (magenta)
	S-4	▮▮▮▮ (green)
R. Rupture of contour	S-1	▮▮▮ (red)
	S-2	▮ (blue)
	S-3	▮ (magenta)
	S-4	▮ (green)

Parameters sequence in the structure configuration

Parameter		
Ss. Survival of some significant details	S-1	▮▮▮▮▮▮▮▮▮ (red)
	S-2	▮▮▮▮▮▮ (blue)
	S-3	▮▮▮▮▮▮▮▮▮▮▮ (magenta)
	S-4	▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ (green)
C. Very codified drawing	S-1	▮▮▮▮ (red)
	S-2	▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ (blue)
	S-3	▮▮▮▮▮▮▮▮▮▮▮▮▮ (magenta)
	S-4	▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ (green)
N. tendency not to encode the image	S-1	▮▮▮▮ (red)
	S-2	
	S-3	▮ (magenta)
	S-4	
D. Tendency to symmetry	S-1	▮▮▮▮▮▮▮▮▮▮▮ (red)
	S-2	▮▮▮▮▮▮▮▮ (blue)
	S-3	▮▮▮▮▮▮▮▮▮ (magenta)
	S-4	▮▮▮▮▮▮▮▮▮▮▮▮▮ (green)
J. Tendency to assymmetry	S-1	
	S-2	▮ (blue)
	S-3	▮ (magenta)
	S-4	▮ (green)
F. Survival of all the details	S-1	
	S-2	▮▮▮▮▮▮ (blue)
	S-3	▮ (magenta)
	S-4	
P. Gradual Loss of details	S-1	
	S-2	▮ (blue)
	S-3	▮ (magenta)
	S-4	
U. Enriching the sequence by introducing new details	S-1	▮ (red)
	S-2	▮▮ (blue)
	S-3	▮ (magenta)
	S-4	
Z. Changes of the image orientation	S-1	▮ (red)
	S-2	▮▮▮ (blue)
	S-3	▮▮▮ (magenta)
	S-4	▮ (green)
O. Survival of the composition structure	S-1	▮ (red)
	S-2	▮▮▮▮▮ (blue)
	S-3	▮ (magenta)
	S-4	▮▮▮▮▮▮▮ (green)
K. Juxtaposition of secondary images	S-1	▮ (red)
	S-2	
	S-3	▮ (magenta)
	S-4	▮▮ (green)

Sequence structure of stroke parameters

Parameter		
I. No differential - encoded	S-1	▮▮▮▮▮▮ (red)
	S-2	▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ (blue)
	S-3	▮▮▮▮▮▮▮▮▮▮▮▮▮▮ (magenta)
	S-4	▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ (green)
Q. Stroke texture is beating force to stroke contour	S-1	▮▮ (red)
	S-2	▮▮▮ (blue)
	S-3	▮ (magenta)
	S-4	▮▮ (green)
B. Texture - Contour	S-1	▮▮ (red)
	S-2	▮▮ (blue)
	S-3	▮▮▮ (magenta)
	S-4	
E. Affirmation - contour break off	S-1	
	S-2	▮ (blue)

Parameter	Stream	Value (scale 0–26)
	S-3	magenta ≈ 6
	S-4	—

General Stream parameters

Parameter	Stream	Value (scale 0–26)
M. Handling-Movement	S-1	red ≈ 21
	S-2	blue ≈ 10
	S-3	magenta ≈ 8
	S-4	green ≈ 2
X. Realistic - abstract Representation	S-1	red ≈ 8
	S-2	blue ≈ 2
	S-3	magenta ≈ 13
	S-4	—
W. From abstract to realistic representation tendency	S-1	red ≈ 2
	S-2	—
	S-3	magenta ≈ 2
	S-4	—
V. Rotation	S-1	red ≈ 2
	S-2	blue ≈ 2
	S-3	—
	S-4	—
H. show zoom in or zoom out sequences	S-1	—
	S-2	—
	S-3	—
	S-4	green ≈ 4
Ic. Trend to compositional balance	S-1	red ≈ 16
	S-2	blue ≈ 6
	S-3	magenta ≈ 8
	S-4	green ≈ 8
SCALE		0 4 6 8 10 12 14 16 18 20 22 24 26

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