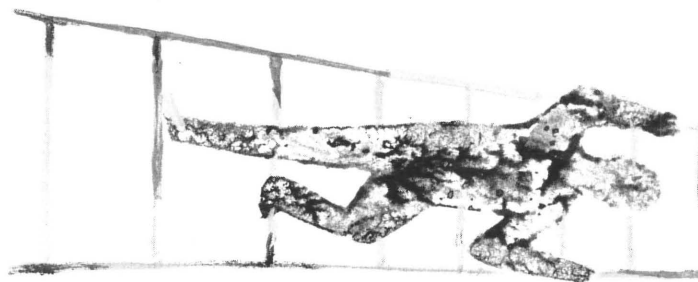


*The spatial character of a piece of writing or reading is perceptually twofold. Writing and reading establish a close bodily and mental relation between a writer or reader and the surface on which letters are formed. This relation involves two different attitudes. Attitude I, an orthogonal relationship to letters, is dominated by vision and evokes a sense of rising and conquering or its opposite, stability. Attitude II, a horizontal relationship, is dominated by action and evokes the senses of near and far, outgoing and withholding, active and passive. In the process of writing or reading the attitudes fuse, combining a detached self with a self that actively engages in reaching a goal.*

# Spatial Aspects of Graphological Expression

Rudolf Arnheim

Writing and reading establish a close bodily and mental relation between a writer or reader and the surface on which letters are formed. This relation involves two distinctly different attitudes depending on the spatial position attributed to the writing/reading (w/r) surface in perceptual space. The perceived spatial position, in turn, exerts a decisive influence on the visual expression observed in the written and printed letters and thereby on the grapholo-



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gical symbolism inherent in that expression. Let me describe these attitudes which I call Attitude I and Attitude II.

#### In Attitude

I the writer or reader faces the w/r surface orthogonally. This spatial relationship is most perfectly realized when the surface is objectively vertical, e.g., a wall blackboard. In practice, of course, the line of sight meets the surface rarely at an exactly right angle. Depending on the position of the head in relation to the particular spot at a particular moment of the scanning process, the actual angle plays around the orthogonal. What matters psychologically, however, is that the relation between line of sight and surface is perceived as right-angled. This is the case even when the w/r surface or a book are on a table. The oblique angle of sight is viewed as a deviation from the orthogonal norm.

This right-angled relation is, in Attitude I, purely a matter between the line of sight and the surface. It is a narrowly confined system, largely independent of its orientation in the surrounding geographical space. Whether the viewer is standing upright or lying on his side or back, whether he looks at an inscription on a vertical wall, the ceiling, or the floor, the optical relation within the system can remain the same and the perceptual relation often does. The image projected upon the retinae does not partake in the absolute spatial position at which it is obtained.

Correspondingly, the spatial coordinates of the image can remain equally independent of those of the geographical environment. Experiments show that a rotated image retains its original up and down, left and right. If in a pic-

see

see

see

ture a man is seen climbing a ladder, he will be seen moving upward, no matter how the picture is oriented in physical space. The same is true for the spatial coordinates of written or printed letters. In the extreme case of someone bending forward and reading an upside-down text through his straddled legs, top will still be top and bottom will be bottom.<sup>1</sup> Since spatial directions are of fundamental influence in graphology, this perceptual fact demands attention. In Attitude I, verticality and horizontality are determined by the confined eye/surface system. The w/r surface is perceived as vertical and therefore possesses an up and down. This perceptual effect is strengthened, however, when it happens to coincide with the spatial framework of the geographical setting, as in the case of the blackboard on the wall.

For Attitude II the w/r surface is viewed as horizontal, that is, it runs parallel to the person's line of sight. Again this is merely the ideal or pure condition since in practice the person can see the surface only when he or she looks at it at some angle. This angle, however, is perceived as a deviation from a line of sight parallel to the w/r surface. The surface, in turn, displays its horizontality most compellingly when it coincides with the horizontal of the physical environment, e.g., when it is placed on a table top. But Attitude II plays its part also when there is no such spatial coincidence, e.g., when somebody writes or reads while lying on his side.

The point of the present analysis is that both attitudes determine the spatial conception of the writer or reader in each case with regard to one and the same objective situation. Suppose somebody sits

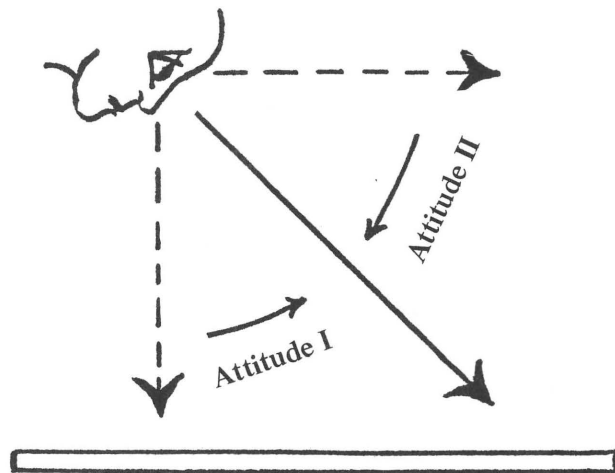


Figure 1.

at his desk and faces the w/r surface at an angle of  $45^\circ$  (Figure 1). With the w/r surface serving as the base of reference, Attitude I conceives of the tilted line of sight as raised from the vertical, while Attitude II conceives of it as dipping from the horizontal. The different spatial conceptions implied in the two attitudes merge and lead to a correspondingly complex symbolical expression.

Let me illustrate the implication by a reference to architectural space. Here again the perceptual difference between verticality and horizontality is decisive. The vertical acts as the dimension of *vision* by displaying the upright building to our sense of sight. Chartres Cathedral is what I see when I look at it orthogonally with my eyes directed horizontally. The building has an up and down direction, which determines its expression and symbolism decisively. At the same time, however, the building extends horizontally as described in its ground plan. The horizontal is the dimension of *action*. It has no up and down; instead it has a forward and backward. Its parts vary in their distance from the observer. For somebody standing before the west façade of the church, the entrance is near, the altar is far away. Vertical and horizontal aspects complement one another. The relation to the vertical is our Attitude I; the relation to the horizontal is our Attitude II.<sup>2</sup>

The comparison with architecture suggests that Attitude I is dominated by vision, Attitude II by motor activity. In the one case the viewer looks at the situation as though it were a picture; in the other he views a field on which he is acting or will act or on which someone has acted. If a painting on the wall

exemplifies the first case, a chess board or a road map illustrates the second. A chessboard is a field of action on which the player moves forward or backward. The directions and distances are defined in relation to him as the base of reference. Similarly, a traveler looks at a road map as a horizontal field of action forecasting moves through the landscape.<sup>3</sup>

We shall now be understood when we assert that the spatial character of a piece of writing or reading matter is perceptually two-fold. As a vertical expanse it presents a world characterized by up and down. The top of the page is up, the bottom is down. In consequence of our experience in gravitational space, moving upwards goes symbolically with rising, conquering, freeing oneself from the base; moving downward goes with digging in, refraining from the risks of flight, rooting in the solid foundation. This is the outlook of Attitude I, a view that has been widely acknowledged in the writings of graphologists.

The conception of the writing surface as a pictorial space in which the directions of up and down assume symbolic meaning was introduced by Max Pulver, one of the two founders of modern handwriting analysis. He speaks of the horizontal line created by writing as the "borderline between up and down, the horizon, the division between day and night. In spontaneous imagery, above is seen as heaven, sun, day, demonic (spiritual) powers, light. Below the line is the region opposite to that of light: night, darkness, abyss, depth."<sup>4</sup>

The other founder of modern graphology, Ludwig Klages, offers a similar interpre-

167 tation.<sup>5</sup> He also speaks of “upper” and “lower” lengths thereby affirming the perceptual verticality of the image, and he attributes “for not yet fully clarified reasons” dominance of the upper lengths to a lightness of the spirit (idealism, enthusiasm, abstract thinking, but also eccentricity and superficiality) and dominance of the lower lengths to heaviness or weightiness of the spirit (realism, practical and technological leanings, conscientious observation, but also pedantry, sedateness, and materialism). Klages also refers to the ancient interpretation of the human body as the vehicle of the three levels of the soul. He may be thinking of Plato’s *Timaeus* 69/70, where God in creating the human body is said to have separated the head as the seat of the divine spirit from the rest of the trunk by the “isthmus and boundary” of the neck. The thorax as the seat of the inferior soul holds courage and passion in its upper section and the instinctual desires in the lower. Here again the symbolism of high and low presupposes, in its application to graphology, the conception of the writing surface as an upright visual image. Under the influence of Pulver and Klages similar interpretations reverberate in the writings of more recent graphologists, such as Klara G. Roman or Alfred O. Mendel.<sup>6</sup>

At the same time, however, Klages mentions kinesthetic factors that point to the spatial situation corresponding to our Attitude II. Handwritings in which the upper lengths of letters are taller than the lower lengths are attributed by Klages to a dominance of tensor movement in the writer’s arm, which leads away from the body, whereas in the opposite case flexor movement towards the body prevails. He also interprets

descending lines as due to a lessening of muscular tension caused by weakness and fatigue and therefore indicative of states of depression.

It will be seen that although Klages does not seem to have been aware of it, these kinesthetic factors do not fit the verticality of Attitude I. They define locations not by up and down but as distances from the person’s body, and directions as moving away from, and toward, the body. The spatial framework is that of the horizontal field of action. Being kinesthetic, these percepts refer most directly to the motor behavior of writing, but the corresponding visual conception is not separable from it. Also, to the extent to which a reader perceives written material as the product of writing behavior, kinesthetic overtones will resonate in the visual experience of reading. The muscular pressure of the stroke leaves its traces in the visual shapes produced by brush or pen and imitated in some typefaces. However, these kinesthetic connotations are not indispensable for the spatial conception of Attitude II, which interprets the dimension of top and bottom of the page as near or far rather than up and down.

While Attitude I makes us look at the w/r surface as a picture of life in gravitational space with the symbolic connotations to which I referred, Attitude II deals with the same surface as a microcosm of human activity, dominated by the symbolism of relations to the self: close and distant, far and near, outgoing and withholding, active and passive. In the more specifically kinesthetic sense, the contraction of the flexor muscles allows for more active or more passive expression. Actively it involves such behavior as hugging, squeezing, embracing, whereas passively centripetal

motion results from the relaxing of an effort to attain a goal located beyond the self. This abstaining from outreach may go with a resigned return to the self. Conversely, moving away from the body is perceived as muscular expansion, which stands in the active sense for reaching, yearning, stretching, invading the outer world; it stands passively for the tension release of letting go, letting it all hang out, surrendering to the outer world. Daniel S. Anthony has stated: "Emphasis on contraction implies an introversive increase in the writer's volitional, emotional, and intellectual controls. When release is emphasized, there is a relative increase in progression, exploration, goal direction, spontaneity, extraversion, impulsiveness, fantasy, and world directedness."<sup>7</sup>

From this point of view, the traditional Chinese writing in vertical columns, for example, would be perceived as starting with a wide outreach and moving gradually towards the self with a kind of raking gesture that assimilates the things of the world to the needs and principles of the self. The tension of the initial effort diminishes with the approach to accomplished acquisition. This experience may be compared with the view of similar material in Attitude I, for which the gradual return from an initial invasion of the heights to the safety of a ground level represents an objective happening, which often produces emotional resonance or empathy on the part of the viewer but has no direct spatial relation to an actively involved self.

The two attitudes we have separated for the purpose of theoretical analysis fuse in the actual experience of writing and reading. The resulting expression, to be interpreted by the graphologist, is necessarily complex. The extent

to which one attitude dominates the other will vary from case to case. The two attitudes agree with regard to some aspects of what is perceived. For both of them, the direction towards the top of the page means leaving the safety of the home base and reaching out, even though in the one case this means watching a detached ascent whereas in the other case the self itself, actually or vicariously, moves forward on the horizontal board of action.

But the differences are equally evident, especially in the interpretation of the lateral movement, which carries the writer and reader of Western languages along the line from the left to the right. For Attitude I this lateral displacement is the principal action symbolizing advance and progress, the road into the future. But whereas for Attitude I this lateral progression in writing and reading is the vehicle with whose behavior the observer identifies as though he were watching a racehorse, Attitude II perceives this same displacement more nearly as a part of the self's own actual or potential motor activity. From that point of view, however, the laterality of Western writing is not the primary but a secondary direction. It runs at right angles to the sagittal plane of the person's body, which determines the principal axis of outward and inward directed motion.

The twofold nature of the space perceived in w/r surface complicates the task of the graphologist. But the graphologist, just like anybody else who handles field structures as an artist or scientist, is accustomed and resigned to the teasing apart of components and to their integration in the whole.

1. For a recent paper see Gaetano Kaniza and Giorgio Tempieri, "Environmental and Retinal Frame of Reference in Visual Perception," *Italian Journal of Psychology*, 1976, vol. 3, #2, pp. 317-332.
2. Rudolf Arnheim, *The Dynamics of Architectural Form*, Berkeley and Los Angeles, 1977.
3. Cf. Rudolf Arnheim, "The Perception of Maps," *The American Cartographer*, 1976, vol. 3, #1, pp. 5-10, and Alan K. Henrikson, "The Map as an 'Idea'," *The American Cartographer*, 1975, vol. 2, #1, pp. 19-53.
4. Max Pulver, *Symbolik der Handschrift*, Zurich 1931, quoted after Oskar R. Schlag: "Max Pulvers Lebenswerk," Beiheft zur Schweizerischen Zeitschrift für Psychologie und ihre Anwendungen #20, 1953, p.11.
5. Ludwig Klages, *Handschrift und Charakter*, Leipzig 1916, pp. 122, 131.
6. Klara G. Roman, *Handwriting, a Key to Personality*, New York 1952. Alfred O. Mendel: *Personality in Handwriting*, New York 1947.
7. Daniel S. Anthony, *The Graphological Psychogram*. Maplewood, N.J., 1964, p. 23. For the preparation of the present paper I have much profited from a longstanding exchange of ideas with Daniel and Florence Anthony.

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