

Richard Woodfield

Gombrich on Perception and Mental Set

You might know that I have recently published two books, *Gombrich on Art and Psychology* for Manchester University Press and *The Essential Gombrich* for Phaidon. I am still very immersed in my subject. The reason is that even at the age of eighty seven, Gombrich is still very active, refining past ideas and coming out with new ones. There has been a remarkable continuity in his research, which started in Vienna in the thirties.

Gombrich's interest in the application of psychology to the study of the visual arts was stimulated by three of his teachers named in the dedication of *Art and Illusion*: Emanuel Loewy, Julius von Schlosser and Ernst Kris. But another powerful influence was Karl Bühler, who held the Chair in Psychology in Vienna, and whose work in semiotics deserves to be better known.

Loewy was interested in applying discoveries in the psychology of perception to the development of Greek naturalistic imagery. He was a member of Freud's circle, as was Ernst Kris, with whom Gombrich worked on a project on caricature. Schlosser was a close friend of Karl Vossler and Benedetto Croce and consequently became interested in *Kunstsprache*, what Gombrich later called 'the linguistics of the image'.

In mentioning Loewy, Schlosser and Kris, Gombrich staked a claim to continuing the activities of the Vienna School of historians. But it was actually Bühler who had the greatest theoretical influence on his thought about imagery. Bühler was deeply involved with linguistics and also its parallels in visual imagery, from both theoretical and historical perspectives. He developed the theory of the relational model which Gombrich used to great effect in *Art and Illusion*. In a chapter of his book *Sprachtheorie*, Bühler 'wanted to clarify the capacities of language by glancing at other sign systems'. And, as Gombrich observed:

the eleven pages that he devoted to these questions belong to the most fundamental disquisitions ever dedicated to the general problem of representation. Bühler.. starts with the insight that there exists a spectrum, ranging from the extreme fidelity of nature exhibited by a waxwork, which ... resembles the model only relatively, to, for instance, a temperature chart, which merely records certain relationships in a given field. In between we find..., for instance, the notes of a musical score, the map, the landscape painting, and the illusionistic backdrop of the stage as different but equally valid systems of signs. ... What is at stake is the notion of 'relational fidelity', which is brilliantly explained in connection with black-and-white photography.¹

The idea of 'relational fidelity' offers an alternative to a purely linguistic notion of communicative systems and also disposes of the problem of the conceptual image, which was central to Loewy's account of the development of Greek art. One doesn't need to refer to what is going on in the sign user's head to describe the nature of the signficatory process.

I found it interesting that in a lecture he gave before publishing *Art and Illusion*, Gombrich said:

One of the things I believe to have learned is that it makes very little sense to speak of 'seeing the world' or any such generality. We can study perception only through actions or reactions in given situations. Seen from this angle the history of representation can be viewed, rather prosaically, as a successive series of matching experiment and Riegl's thesis [of the *Kunstwollen*] might be reformulated to say that however weird these matchings may seem to us, they were obviously accepted by the society for and in which they were made.²

But this is to step forward a bit too quickly when I need to backtrack.

Working for the BBC's Monitoring Service during the war boosted Gombrich's interest in perception, particularly in the problem of projection. Monitors, like aerial reconnaissance experts, were prone to error and it was a matter of great urgency to discover what was going on. He wrote about the subject and after the war applied his discoveries to the investigation of the visual image, drawing upon the insights of the current new psychological and semiotic theories.

¹ E H Gombrich, "Art History and Psychology in Vienna Fifty Years Ago", *Art Journal*, 1984 (pp. 162-4), p. 164.

² "Art History and the Psychology of Perception", unpublished ms. of a lecture given to the British Psychological Society in Durham 17.4.1955, pp. 5-6. I owe my access to unpublished sources to the kindness of Professor Gombrich.

Gombrich made his first public engagement with the 'science of signs' in his review of Charles Morris's book *Signs, Language and Behavior*, published in the *Art Bulletin* in 1949.³ He found Morris's behaviorism and scientism unattractive. But he mainly disagreed with Morris's idea that visual imagery might communicate in precisely the same kinds of way as verbal language. As visual images do not possess the equivalent of language's formators they are incapable of making the equivalent of statements.⁴ Truth and falsity can only be attached to propositions and, as far as images are concerned, it is only the propositions *used* about images which may have any truth value, not the images themselves. Unlike a name, an image of an object might stand for either a universal or a particular, and its degree of realism does not determine its representational status.

Morris's resemblance theory of the iconic sign⁵ was fraught with difficulty as well. Through his work on caricature with Ernst Kris, Gombrich had become acutely conscious of the problems involved in offering any account of likeness. The late invention of portrait caricature is a matter for surprise and needs to be explained. And Annibale Carracci's visual jokes only make sense when they are supported by language. In fact, it is language which, in this case, triggers the perception of visual similarity.

Furthermore, an apparently iconic image may have elements which do not satisfy the definition of iconicity – like a painting by Guardi, which has figures which are simply strokes of paint:

Guardi relies on the beholder's capacity to read 'iconicity' into his sign. The contextual, emotional, or formal means by which this type of interpretation is evoked or facilitated ... would have to form one of the main fields of study of a descriptive semiotic of the image. Perhaps it will show that what has been called the history of 'seeing' is really the history of a learning process through which a socially coherent public was trained by the artist to respond in a given manner to certain abbreviated signs.⁶

³ Reprinted in E H Gombrich, *Reflections on the History of Art* ed. Richard Woodfield, Oxford 1987, pp. 240–49.

⁴ For a further discussion of this subject see Roger Scruton, "The Impossibility of Semiotics" in *The Politics of Culture*, Manchester 1981, pp. 31–43. There was a reply by Umberto Eco, "On fish and buttons: Semiotics and the philosophy of language", *Semiotica*, 48 (1984), pp. 97–117.

⁵ X is an iconic sign of Y means X bears a visual resemblance to Y. For a discussion of the resemblance theory of representation see my entry "Resemblance" in D. Cooper (ed.), *A Companion to Aesthetics*, Oxford 1992.

⁶ *Reflections*, p. 248.

It is significant that portrait caricature emerged from a situation where patrons encouraged the exercise of artistic virtuosity. The social position of Italian artists at the end of the cinquecento was very different from what it had been at the beginning of the quattrocento and Annibale Carracci would have taken great delight in educating his audience into an appreciation of his visual jokes. Indeed, we have been told that caricatures were first appreciated by their victims: wealthy patrons almost queued up to have themselves drawn.

At this juncture, Gombrich could have taken the step of regarding iconic signs as being just as conventional as the signs of spoken language. There was precedent for it, particularly in the propaganda put out by Picasso's dealer Daniel Kahnweiler, who argued that as the artist could not transcribe reality, naturalism was a form of writing and cubism was just a further development in the creation of symbols which could be learned to stand for reality:

We must not forget something that is absolutely fundamental ... to the comprehension of cubism and ... modern art: the fact that *painting is a form of writing*. Painting is a form of writing that creates signs. A woman in a painting is not a woman; she is a group of signs that I read as 'woman'. When one writes on a sheet of paper 'f-e-m-m-e', someone who knows French and who knows how to read will read not only the word '*femme*', but he will see, so to speak, a woman. The same is true of painting; there is no difference. Fundamentally, painting has never been a mirror of the external world, not has it ever been similar to photography; it has been a creation of signs, which were always read correctly by contemporaries, after a certain apprenticeship, of course. Well, the cubists created signs that were unquestionably new, and this is what made it so difficult to read their paintings for such a long time.⁷

There had always been a battle to defend abstract art in the face of its philistine critics and one argument which was frequently used was that naturalistic painting was *actually* just as conceptual as abstraction. What is being described here is the phenomenon of *inculcation* and theorists such as Rudolph Arnheim and Nelson Goodman have argued that the perception of resemblance is a matter of familiarity. Given enough time, cubist portraits will look like their subjects; only a philistine would object to that possibility.

Indeed, Gombrich's study with Bühler could have suggested the idea that the naturalistic painting was purely notational, and that notations had to be learned, even if these notations operated across a scale.

⁷ Daniel-Henry Kahnweiler, *My Galleries and Painters*, London 1971, p. 57.

But in his review, Gombrich mentioned Geza Révész's book, *Ursprung und Vorgeschichte der Sprache*,⁸ and it must have occurred to him that the visual arts had a point of origin, as did verbal language. How can one agree to create a language when there's no language to arrive at that agreement and how does one develop imagery without establishing what an image might be? [Figure 1] This is the problem that Gombrich solved in his famous essay 'Meditations on a Hobby Horse':⁹ representation originates in substitution, and substitution is a biological, as opposed to a cultural, category.

In the same way that a child sucks its thumb as a substitute for its mother's breast, a kitten chases a ball instead of a mouse. But humans, unlike animals, may create and elaborate fictions. Deprived of a horse to ride, the child picks up the nearest convenient stick and turns it into its steed.¹⁰ The stick is not an image of a horse, nor is it a



Figure 1 by S. Harris, from *Punch*, July 1st 1988.

sign for a horse: it is simply an object being used as a horse. The horse substitute can be elaborated by the addition of further identifying attributes, such as a mane and reins, possibly a tail. It is the process of fictional elaboration and the associated activity of decoration which dis-

⁸ Bern 1946; translated into English as *The Origins and Prehistory of Language* by J. Butler, London 1956.

⁹ Republished in *Meditations on a Hobby Horse*, London 1963.

¹⁰ I cannot agree with Umberto Eco's account of the hobby-horse in terms of a theory of pseudo-iconicity in virtue of the stick's linearity: linear objects come in different lengths, weights and structures (string is linear when it is held vertically). More importantly, it is the surrounding activity which defines the assigned use. Umberto Eco, *A Theory of Semiotics*, Bloomington 1979, pp. 208-9.

tinguishes human from animal behaviour in this context. This is also the origin and character of so-called primitive art.

The idea of substitution is well known to Freudian psychology, which Gombrich met through Ernst Kris, but the hobby horse can also be described using J. J. Gibson's concept of 'affordances'. In Gibson's psychology, objects in the world embody information about their potentiality for use: a stick affords wielding, riding, thrusting, pushing ... and so on. A stick can become a lance, a horse, a sword, a poker ... and even a phallus, as in the Indian *linga*. The *symbolic* function emerges from the stick's use as a horse, sword, or phallus and only has significance for its community of users. Whether those kinds of things are specifiable and a matter of common agreement is actually open to question.¹¹

A child's riding on a stick may be taken to be a *sign* of his using the stick for a horse, but the stick is not itself the sign of a horse, in the way that clouds of a certain sort may be signs of rain. Human signs are the products of articulated systems; they are born of notation. They are not additional objects in the world, like primitive fetishes. When the ancient Greeks created an aniconic image of Venus, they didn't create a sign of Venus but Venus herself.

The aniconic image, or fetish, becomes an object of social knowledge and over time that knowledge may change. With growing sophistication, or shift in attitudes, what was originally a cause of fear and reverence may become a target for ridicule. In this context, Gombrich has recently remarked:

In the chapter of *Art and Illusion* called 'Pygmalion's power', I elaborated on the idea that the image of a woman may not so much represent a woman, but be – to put it pedantically – a member of the class of woman. This very possibility has, of course, far-reaching consequences for the mental set with which images may be regarded in the religion of various cultures. The Jewish prophets never ceased to upbraid the heathen for failing to see that their idols were nothing but sticks or stones. They were no gods, for god cannot be represented.¹²

The later Byzantine complaint that pagan statues were inhabited by demons was probably a product of those statues' high degree of naturalism. It was almost as if the statues *could* spring to life and they were

¹¹ My inclination is to follow Dan Sperber's views on this subject: Dan Sperber, *Rethinking Symbolism*, Cambridge 1988.

¹² Ms. of an unpublished lecture "Signs and Images" given at the Warburg Institute 8.6.94., courtesy of Sir Ernst.

buried precisely to stop that happening. It was a brave man who would actually demolish a pagan statue.¹³

The hobby horse or idol should be treated as an object of thought or behaviour rather than as a translatable sign. This is not to say that substitutes did not lead into translatable signs. Substitutes are the first step to developed and standardised imagery. Words are visual images of a kind and there is a short distance between Egyptian hieroglyphs and visual imagery, both of which demand reading.¹⁴

At this point it is useful to introduce the notion of mental set, which is the mind's way of excluding unwanted stimuli from attention. It is, if you like, a processing device for relevance: it enables the mind to tune into the values created by particular systems of communication. Its most obvious application is to speech: we are tuned into our own language and despite the individual differences between particular speakers, it enables us to process significant sound patterns as linguistic utterances. It has consequences for written language as well. As an English language user I expect to read 'pain' as in 'pain and tears'; it takes a conscious switch of gear to read 'pain et beurre'. A similar switch in gear is involved in reading 'AEIO' and 'AEIO123', and in 'AEIOI23' in a handwritten form there may be a clear case of undecidability, with 'IOI' being ambiguous.

There was a switch in gear involved in the transition from Egyptian hieroglyphs to Greek naturalism. Hieroglyphics literally invited reading. While renaissance scholars believed that the hieroglyph was an allegorical image, research following the discovery of the Rosetta Stone has shown that it is actually based on the phonogram and logogram. One does not look at Egyptian images as pictures of a lost world but as texts which demand to be read. Herodotus noted that the Egyptians represented Pan as the Greeks did, with the head and legs of a goat:

They so represent him not because they really think he looks like that. On the contrary, they do not believe him to look different from the other gods, but that is how they depict him – why, I prefer not to say.¹⁵

Gombrich has remarked that what interested him in this passage was not so much 'whether Herodotus' report is correct ... (but) the fact that the Greek historian obviously took it for granted that the image of a

¹³ On this subject see C. Mango, "Antique Statuary and the Byzantine Beholder," *Dumbarton Oaks Papers*, 17 (1963), pp. 65ff.

¹⁴ On this topic see the excellent study by Heinrich Schäfer, *Principles of Egyptian Art* (ed. Emma Brunner-Traut, trans. John Baines), Oxford 1986.

¹⁵ Quoted by Gombrich in "Signs and Images", p. 18.

god shows what he looks like, that it is *iconic*, but that his Egyptian informants had told him that, at least in one case, they did *not* share this assumption.¹⁶

Different mental sets are involved in reading pictographs than those used in looking at naturalistic representations. We may, however, start with an interesting geometrical example of a drawing which may be seen in two or three dimensions, given the right mental set. [Fig. 2] As one looks at the illustration from left to right, one starts with a three-dimensional Necker cube and then 'holds' the cube with increasing difficulty. Looking right to left, one starts with a two dimensional configuration which one can then re-read three dimensionally on recognising the Necker cube.

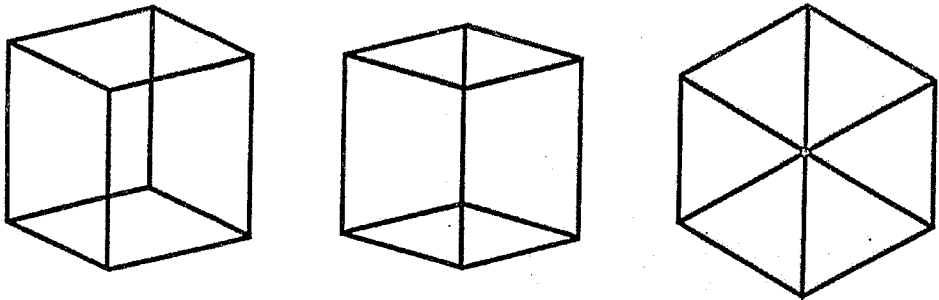


Figure 2 from F. Attneave, 'Multistability in Perception', *Scientific American*, December 1971, p. 67.

Pictographs are not scanned for imagined depth; their function is purely notational. In this picture [Fig. 3] one imagines the hoop to be located in a virtual space and, true to the results of Thouless's experiment on 'Phenomenal regression to the real object',¹⁷ it appears to be wider than it actually is. The spectator assumes the mental set of reading for depth and sees the hoop inclining away from him. In this abstracted drawing of the hoop, by contrast, one does not feel the same pull. [Fig. 4] And in any naturalistic image based on one point linear perspective,¹⁸ the spectator is assigned an imagined viewing point by the image, whereas in a map or pictograph there is no such position assigned.

Mental set enables one to tune into the values created by a particular form of imagery. One does not imagine sculptural busts to be

¹⁶ *Ibid.*

¹⁷ *British Journal of Psychology*, 21 (1931), pp. 339-59.

¹⁸ This is a point completely missed by Margaret Hagen in *Varieties of Realism*, Cambridge 1986 and Rudolph Arnheim before her.

naturalistic renderings of savagely butchered bodies; it is understood that one is simply looking at a bust. Black and white photography is taken to be a naturalistic depiction of a coloured world, not an unnatural representation of a black and white one.



Figure 3

from R. L. Gregory, *Eye and Brain*, 3rd. edition 1979, p. 171.

Going back to 'Meditations on a Hobby Horse' one may see how the naturalistic artist's invitation to imaginatively participate in a

scene requires the spectator to see marks as spatially orientated forms. We can now begin to ask how semiotics fits into this scheme of things.

Starting with signs, we can say that we do not test them with our imagination or scrutinise them for their affordances; we consult them for our message to us. This is not to say that there can be no exceptions. Gombrich is fond of quoting a passage from Charles Dickens' novel, *Great Expectations*:



Figure 4 *Eye and Brain*, p. 170

As I never saw my father or my mother, and never saw any likeness of either of them (for their days were long before the days of photographs), my first fancies regarding what they were like, were unreasonably derived from their tombstones. The shape of the letters on my father's gave me an odd idea that he was a square, stout, dark man, with curly black hair...¹⁹

But the irrationality of this response was apparent given the recognition that the sculptor could have had no reason to convey such a message by his lettering. Some times we may use red ink to signal the importance of a message, but if we only had red ink to use then there would be no reason for making that inference. As Karl Bühler pointed out, signs are governed by the principle of abstractive relevance or the sign

limit: there is a shared understanding, translatable into rules, of possible limits to meaning.

Contrary to what deconstructionists might believe, signs are tools of understanding not objects for the use of the free play of imagination.

I would like to end by returning to Daniel Kahnweiler. However well intentioned he might have been in his defence of cubism, I think he was mistaken. Analytic cubism represented a challenge to vision and it played with the planes of vision which Cezanne had fought with, and Alberti had much earlier theorised, to construct pictorial space. It self-consciously set out to defeat the spectator's ability to perceive objects in an imagined space. Contrary to Arnheim, there will be

¹⁹ "The use of art for the study of symbols" in James Hogg (ed.); *Psychology and the Visual Arts*, Harmondsworth 1969, p. 164. This essay has now been reprinted in Richard Woodfield (ed.), *The Essential Gombrich*, London 1996.

no time at which we would see cubist still-lives in the same way that we actually see other still-lives; they will always look the same. Synthetic cubism, on the other hand, played with notions of reality and pictorial illusion. Painted newspaper destroyed the idea of a neutral ground in an imaginary space while the use of caning and veneer substituted real surfaces for depicted surfaces. The lines indicating the presence of objects functioned both as notations and depictions. Neither kinds of pictorial image were making statements which demanded to be read or, indeed, could be read.

