

»SEEING AS« AS METAPHOR

A very common characterization of metaphor — among philosophers, literary critics and laymen alike — is that it gets us to see one thing as another, or to see the world as one in which a thing is a certain way. Let us see some examples. Davidson, the main advocate of the theory of metaphor without any special meaning, often stresses that metaphors get us see one thing as another: »Metaphor makes us see one thing as another by making some literal statement that inspires or prompts the insight« — making it clear at the same time that »seeing as is not seeing that.«¹ Ricoeur who builds his theory of metaphor as an icon on a cognitive notion, namely, that of »seeing as«, says: »Thus, the ‚seeing as‘ activated in reading ensures joining of verbal meaning with imagistic fullness. And this conjunction is no longer something outside language, since it can be reflected as a relationship. ‚Seeing as‘ contains a ground, a foundation, that is, precisely, resemblance — no longer the resemblance between two ideas, but that very resemblance the ‚seeing as‘ establishes. Hester claims emphatically that similarity is what results from the experience — act of ‚seeing as‘. ‚Seeing as‘ defines the resemblance, and not the reverse. This priority of ‚seeing as‘ over the resemblance relationship is proper to the language game in which meaning functions in an iconic manner.«²

As is widely known, the notion of »seeing as« belongs to the domain of cognitive science, namely, that of cognitive psychology. The notion of »seeing as« is closely connected with the notion of image. During the past years a vigorous discussion raged among the psychologists whether images are stored in the long-term memory. Almost all of psychologists concerning with this problem have come to the conclusion that if images are stored in the memory, these images are not like pictures or photographs and that the metaphor of the mind visually seeing a mental picture is a misconception.

Images are suitable as an alternate method of relating the properties of the referents of metaphor to that of propositions. Sometimes it seems that the comprehension of a metaphor depends on a visual image rather than on a linguistic interpretation of the referents. Recall Thomas Hardy's me-

¹ Donald Davidson: *Inquiries into Truth and Interpretation*, Oxford University Press, Oxford 1984, p. 263.

² Paul Ricoeur: *The Rule of Metaphor*, University of Toronto Press, Toronto 1975, p. 213.

taphor: »The drops of logic Tess had let fall into the sea of his enthusiasm served to chill its effervescence to stagnation.« Many readers interpreting this metaphor will shape the mental image of drops of cold rain falling into a warm sea. How can we establish connection between this mental image and the combination of features stored as nodes in a propositional network found in the semantic memory?

Let us briefly sketch three positions on images in memory.

Pylyshyn's view. The source and landmark in the revival of the old anti-imagery arguments in terms of contemporary work in artificial intelligence, computer science, and general theories of human information was Pylyshyn's paper »What the mind's eye tells the mind's brain«, published in 1973. Pylyshyn's kernel argument is briefly as follows: mental image can be better understood not as an alternative or as a parallel form of mental representation in memory but as a form which is ultimately reducible to propositions. Pylyshyn's opinion is that propositional representations are sufficient and appropriate forms for representing our knowledge. In a pregnant Mac Cormac's formulation of subject-matter: »The later conclusion arises from the contention that not all propositional relations, especially abstract ones, can be represented in recall from memory by images, but all images can be alternatively expressed by a series of propositions.«³ Under the notion of proposition we understand a semantic content of sentence or utterance.

Arguments against imagery:

1. Propositional knowledge is the most suitable and appropriate form for storing information because it represents a set of facts or assertions that are necessarily either true or false. Propositions are amodal and we can use them with equal facility in representing information encoded via the senses and via language. Mental pictures, on the contrary, do not assert anything, and are neither true nor false.

2. We are not allowed to consider images as a distinct entities. Such a consideration represents an incorrect parse of the cognitive system, an incorrect way of dividing up the system into component subsystems.

3. Necessity of a Third Code. It has often been assumed that there exist only two kinds of internal codes: verbal and perceptual. Hence we have a good reason to postulate a third coding system which is amodal, propositional. »But the need to postulate a more abstract representation — one which resembles neither pictures nor words and is not accessible to subjective experience — is unavoidable. As long as we recognize that people can go from mental pictures to mental words or vice versa, we are forced to conclude that there must be a representation (which is more abstract and not available to conscious experience) which encompasses both. There must, in other words, be some common format or interlingua.«⁴

4. Use of a single amodal representational format would result in a considerable simplification of the mental machinery, needed for retrieving information.

5. Imagery, however defined, is not a primitive construct and ought to be further reduced.

³ Earl R. Mac Cormac: *A Cognitive Theory of Metaphor*, The MIT Press, Cambridge, Mass. 1985, p. 141.

⁴ Zenon Pylyshyn: »What the mind's eye tells the mind's brain: a critique of metal imagery«, *Psychological Bulletin* 80: 5.

6. It is more aesthetic and parsimonious to posit only a single form of internal representation for all knowledge.

Paivio's dual position. There are only two codes for representing information in memory: Image and Verbal. Each is understood partly by reference to what is not. Long-term memory representations of images are qualitatively distinct from the representations underlying production and comprehension of language. Although not reducible, these two systems interact, accounting for the fact that the same information can alternatively be recalled from either an image or a series of propositions. »Images and verbal processes are viewed as alternative coding systems, or modes of symbolic representation, which are developmentally linked to experiences with concrete objects and events as well as with language. In a given situation, they may be relatively directly aroused in the sense that an object or an event is represented in memory as a perceptual image and a word as a perceptual-motor trace, or they may be associately aroused in the sense that an object elicits verbal associates or images of objects. In addition, it is assumed that chains of symbolic transformations can occur involving either words or images, or both, and that these can serve a mediational function in perception, verbal learning, memory, and language.«⁵

How can we, then, account for Hardy's metaphor of the »drops of logic« according with Paivio's interpretation? We may form an image in terms of one process and comprehend the semantic similarities and dissimilarities of the features of the metaphor's referents in another process. Through a mediational process we can form a single interpretation. One of the weak points of Paivio's dual account is that it seems there are two processes of metaphoric comprehension. In some cases this is true but it isn't *necessary* true in general.

Kosslyn's position. As the core of his explanatory theory Kosslyn uses cathode-ray tube metaphor (another evidence that science cannot function without use of metaphor!). The idea is as follows:

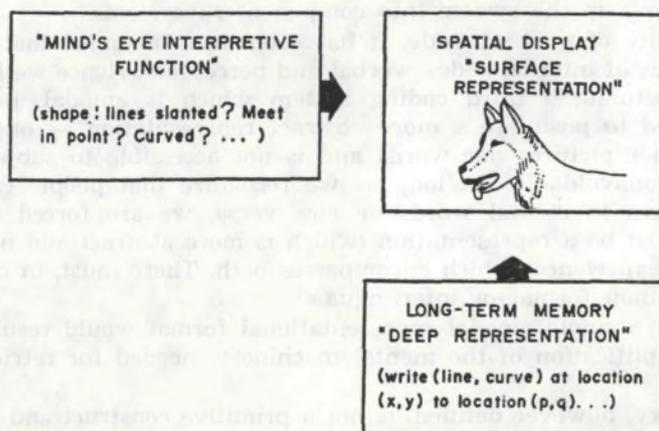


Figure 1. A schematic representation of the cathode-ray tube (CRT) metaphor.

⁵ Allan Paivio: *Imagery and Verbal processes*, Holt, Rinehart and Winston, New York 1971, p. 8.

First, we must make clear distinction between the quasi-pictorial »surface images« and »deep representation« (it is evident that Kosslyn was inspired by Chomsky). Surface images represent a surface structure; they are part of our experience and occur in a spatial display medium, while »deep representations« form an underlying structure. These images are subject to the limitations of the medium in which they occur. Kosslyn's notion of this display medium corresponds to a kind of visual short-term memory buffer.

Second, the »mind's eye« functions as an interface between spatial images and more abstract discursive (»semantic«, if you will) representations. »The display is processed by a ,mind's eye' that »looks« at the display. This ,mind's eye' is an interface with a conceptual system and serves to classify portions of the spatial image in terms of semantic categories . . . Obviously, the ,mind's eye' is not a real eye but corresponds to a set of procedures . . . the output of these procedures serves as the input to a semantic classification mechanism.«⁶

Third, deep representations consist of information stored in long-term memory that can be converted into a surface image. The underlying data-structures may be decidedly nonpictorial in form; »an image could be generated from sets of descriptions, lists of vectors, or the like«.

The differences between the positions of Pylyshyn and Kosslyn are more adequate shown by comparison of properties of propositional and quasi-pictorial formats.

"A BALL IS ON A BOX"

Propositional Representation (Description)	Quasi-pictorial Representation (Depiction)
ON (BALL, BOX)	
<ol style="list-style-type: none"> 1. Relation 2. Argument(s) 3. Syntax 4. Truth value 5. Abstract 6. Not occur in spatial medium 7. No abstract spatial isomorphism <ol style="list-style-type: none"> a) No necessary part/whole relations b) Size and orientation optional c) Arbitrary marks 8. No abstract surface-property isomorphism <ol style="list-style-type: none"> a) No necessary part/whole relations b) Shape not necessary c) Arbitrary marks 	<ol style="list-style-type: none"> 1. No distinct relation 2. No distinct arguments 3. No clear syntax 4. Truth value only when under a particular description 5. Concrete 6. Occurs in spatial medium 7. Abstract spatial isomorphism <ol style="list-style-type: none"> a) Necessary part/whole relations b) Size and orientation necessary c) Non-arbitrary marks 8. Abstract surface-property isomorphism <ol style="list-style-type: none"> a) Necessary part/whole relations b) Shape necessary c) Non-arbitrary marks

Figure 2. Properties of propositional and quasi-pictorial formats.

1. Images do not contain identifiably distinct relations; relations only emerge from the conglomerate of the components being represented together. Thus, one needs two components before relation »on« can be represented.

⁶ Stephen Michael Kosslyn: *Image and Mind*, Harvard University Press, Cambridge, Mass. 1980, p. 6.

2. Images do not contain discrete primitive arguments. The components of an image are not discrete entities that can be related to one another in precise ways. Further, these components attain their status as a parts of a box only in one another's company.

3. Images do not seem to have a syntax (except perhaps in the roughest sense). Any syntax dictating »well-formedness« of pictures or images will probably depend on some sort of interaction with a »semantic component«, that is, what an image is supposed to be an image of. Recall, for instance, »impossible pictures« of Escher.

4. Unlike a proposition, an image does not have a truth value. In fact, as Wittgenstein (1953) pointed out, there is nothing intrinsic in a picture of a man walking up a hill that prevents one from interpreting it as a picture of man sliding downhill backward.

5. Finally, images are not abstract in the way propositions are. Images can be used to represent classes only with great difficulty.

Which are, according to Kosslyn, the »privileged properties« of images?

1. Images arise in a spatial medium that is functionally equivalent to a (perhaps Euclidean) coordinate space.

2. Images are patterns formed by altering the state of local regions in the internal spatial medium.

3. Images not only depict information about spatial extent, but also depict information about the appearance of surface properties of objects such as texture and color.

Although Kosslyn refuses to reduce images to propositions, he does claim that images possess a »propositional« component in addition to what he calls a »literal memory component«.

»In summary, we assign the following characteristics to the long-term memory representation underlying images: The medium is not structured spatially, but stores units of information corresponding to files on a disk in a computer. These encodings are accessed by name. The names indicate the contents and the format of the encodings. The units are specialized to represent either literal encodings of appearances or lists of facts. Lists of facts are searched serially from the top. The actual data-structures have the following properties: (1) They have both 'propositional' and 'literal memory' components. (2) The literal memory component contains representations that underlie the quasi-pictorial experience of imaging; they produce an internal depiction of the appearance of an object or scene. A skeletal shape is always encoded, and representations of local regions may also be encoded. The literal representations may be easily adjusted prior to producing a surface image to alter the subjective size of images, and to alter the relative locations of imaged parts or objects. (3) The 'propositional' component consists of list-like structures. These lists contain the various types, propositions indicating how images of parts ultimately are related to positions on a 'skeletal' shape. Lists of propositions may also be organized into hierarchies and other graph structures.«⁷

⁷ Ibid., p. 146-147.

Conclusion

It seems, at the first moment, rather unfamiliar to talk about images in terms of metaphor. When one uses the phrase »seeing as« we are forced to do so. What's the point of the whole story?

1. Our review of different views in cognitive psychology concerning the notion of image shows that images can not be totally reduced to propositions. The only exception here is »propositional« view, which has the main representatives in Z. Pylyshyn and others. On the contrary, »imagistic« knowledge is richer than propositional knowledge. Serious scientific explanation requires propositional knowledge, since we cannot build explicit and developed science merely on images. We do not deny the important role of metaphor in science, especially in establishing a new paradigm.

2. Finally, »seeing as« is another figure of speech. By use of »seeing as« an explanation for metaphor we risk the fall in regressus infinitum. This fact is a good reason to dismiss it as a legitimate mean for an explanation of metaphor.