

Mental Imagery: *philosophical foundations*

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1. The History of Imagery in Philosophy

Questions of how human thought is construed and executed are as ancient as philosophy itself. Aristotle, for instance, believed that every thought carries an image and that consequently thought without images is impossible (Leahy 2000). In *On Memory and Recollection* Aristotle describes imagery as the persistence of a percept after the object originally causing it has gone. This position is not to be confused with the notion that the “persistence” of the percept comes in the form of a *mental image*, in the sense of a *picture* in the brain or mind. Aristotle’s position is not philosophically problematic in this sense; he simply states the existence of the phenomenon in a pre-theorizing manner. The shift towards more problematic philosophical waters would emerge later with the “mental images” notion.

“The resemblance theory”, for instance, is one such problematic notion. The idea is that imagery of an object is (1) an inner “mental image” of the object and also (2) that the mental image *represents*¹ the object through resemblance, i.e. that the images of the mind resemble the objects they stand for and they stand for those objects because they resemble them. Clearly, thus, we distinguish “imagery” and “imagination” in the pre-theorizing context from the more philosophically burdened term “mental images”. Though the representational explanations vary it

¹ Present in most imagery debates is the above mentioned term “representation”. Since we do not carry the world in our heads some form of representing seems necessary. It is tempting to conclude that when I think of my childhood home I really think of my representation of my childhood home. As we will see in the last section the debate concerning representational issues is very much alive.

is safe to say that imagery is a bearer of *intentionality*; the mental imagery is always *imagery of* something.

The imagery phenomenon has only been partially analyzed throughout the history of philosophy, e.g. the Stoics, Augustine, Descartes, Leibniz, Locke, Hume, Kant, Brentano, Husserl, Wittgenstein, Sartre and Collingwood. Contemporary philosopher Colin McGinn (2004), states the following in regard to the state of imagery in philosophy:

Seldom is the topic handled in a comprehensive and impartial manner –simply as a subject of intrinsic interest, with many aspects and varieties. It is a phenomenon of the human mind that needs to be analyzed and understood in its own right. It is also elusive, tantalizing, and fascinating. Thinking about it calls for rigor and speculation, clarity and tolerance of obscurity. It positively attracts error and confusion.

Despite the familiarity and everydayness of imagery the topic turns out to be extremely elusive. David Hume, for instance, claimed that the difference between perception and images was merely a matter of clarity or “vivacity, i.e. degree: Images, according to Hume were the faint ideas left behind after the more forceful impressions (sensory experience) had made their mark upon the mind. Thomas Hobbes poses a similar idea in *Leviathan*: “...after the object is removed or the eye shut, we still retain an image of the thing seen, though more obscure than when we see it”.

Ludwig Wittgenstein thought differently. In *Zettel* sec. 621, we are provided with a list of differences between images and percepts (or sensations) and here he points out that their difference is not one of “vivacity” as Hume and Hobbes suggested. Instead he puts forward (among other postulates) two proposals of special interest to this thesis: (1) that “Images tell us nothing, either right or wrong, about the external world” and (2) he puts into focus the fact that imagery is subject to the will, something that percepts are not. We cannot choose to *see* the philosophy department in Göteborg when we open our eyes (without going there),

but we can choose to think, or form an “image”, of the philosophy department regardless of our whereabouts.

However, it should be noted that since imagery is subject to the will we may choose to let imagery act as “stand in percepts” if we decide to divert our attention during dynamic world interaction or are diverted for any other reason. Of course the transfer from percept to dynamic image is often done unconsciously and apparently beyond the range of the will, but at least it *can* be done willingly, which is the point.

Furthermore the “stand in percepts” acts *as if* they could tell us something true about the external world, and they most often do. They mimic the dynamics of the world in a way that allows us to navigate flawlessly for limited periods of time relying solely on the dynamic imagery.

2. Modern Empirical Research

The problematics of imagery is not solely left up to philosophers. For instance, imagery played a vital part in classical experimental psychology. Following the empiricist philosophical tradition these researchers referred to the imagery phenomenon as *ideas*. Wilhelm Wundt (1912) took a Humean position when he stated that there is no fundamental difference between the ideas provided by perception and the ideas provided by memory images. It is well worth noting that imagery during this period carried the same representational (intentional) role as it had done earlier in philosophy.

William James (1890), contemporary to Wundt considered the idea that thoughts might not consist of *visual* components as much as the “verbal images” of inner speech. A version of this idea would surface again during the cognitive revolution of the 1960’s and 1970’s under the name “dual coding theory”. The idea is that the mind uses two separate classes of mental representation, namely verbal representations and the infamous mental *images*. Associative processes were deemed to be at work, thus according to the dual coding theory a word gives

rise to an image of the object the word represents. Again it is in one sense unproblematic that hearing or reading the words “childhood home” most often evokes visual memory responses, it is quite another thing to claim that the visual memory responses comes in the form of an image.

More recently an interest for the subject matter has arisen in the cognitive sciences, in neuropsychology, and in the philosophy of cognition (Pylyshyn, Kosslyn, Grueter, etc.). For instance there is the “Mental Rotation experiment”. This is Shepard and Metzlers (1971) blocks rotation example. The experiment was (deemed) demonstrational of the thesis that the greater the angle by which an object had to be rotated with the inner eye, the longer it took to rotate it. The conclusion was made that the objects (the blocks) were represented as three dimensional images in the brain.

Another example is the “Mental Scanning experiment”. This is Kosslyn et al’s Island experiment where it was argued that the time to travel in thought between objects on an imagined map correlates to the distances of the real map (the real *image*). According to Kosslyn who is the best-known representative of the pictorialist approach, this experiment speaks in favour of the “Image as Picture” notion.

Kosslyn model of picture-like mental imagery includes neurological evidence such as PET results (PET stands for “Positron Emission Tomography”. The PET-technique gives us strong indications of the activity of specific brain regions by the study of increase in blood flow to these localizations) and studies of brain lesioned patients. According to Kosslyn’s results mental images and perceptual images are mostly processed in the same regions of the brain. In the so called “visual buffer” (a name coined by Kosslyn) in the visual cortex a graphical image of the imagined object is made.

The current debate is by no means closed. For instance Zenon Pylyshyn (2003) provides strong arguments against the picture theory, strongly influenced by the verbal representation theory mentioned above.

3. The Contemporary Philosophical/Scientific Debate

Above we have gained some acquaintance with the scientific field of imagery.

What do philosophers have to say on the matter? In typical philosophical fashion it is more or less generally stated that the images of the mind appear to be *unlike* images in several ways. According to Tye (1999) three basic objections have been raised by philosophers against the pictorial attitude.

- (1) Objections to the sense of the view,
- (2) Objections of indeterminacy,
- (3) Objections to the evidential underpinnings of the view.

Below I present an account of the objections in a modified version with several examples. The first objection states that there is the old homunculus misleading notion to account for. If imagery is like images that we perceive with our eyes, then who perceives the mental images, a little man in our minds? The answer is definitely negative; there is no man and no “third eye” in the brain to behold the imagery, and there are no images either for that matter. Indeed the questions of how the conglomerates of nerve cells in the brain represent the world is a lively part of contemporary philosophical and neurological research,

The second objection puts into focus that details of the imagery tend to be *indistinct* as the indeterminacy example of the tiger’s stripes show. In a real picture (a photograph or painting) of a tiger the number of stripes is easily determined. Our imaginary tiger has an indeterminable number of stripes. Of course we may “decide” that our imaginary tiger has exactly three stripes, but this only proves the point: we can not “decide” for the picture of a tiger to have the number of stripes we desire. If we imagine a wall filled with red dots the same problem arise; we can not determine the exact number of dots, something that is easily done if we deal with a real picture.

The third objection is mainly that traditionally in philosophy imagery has been examined through *introspection*. Introspection is in itself a very problematic

notion in many ways, but the main point in regard to imagery is that introspection does not show us any mental pictures but only tells us that the imagery experience is phenomenologically similar to the experience of perception.

References:

Aristotle "*On memory and reminiscence*", translated by J.I: Beare, Internet resource: <http://psychclassics.yorku.ca/Aristotle/memory.htm>. Originally published in Ross, W. D. (Ed.) (1930). *The works of Aristotle* (vol. 3). Oxford: Clarendon Press.

Ekberg P. (2005) "*The Spatial abilities of Humans and other Beasts*", Master of Arts essay, Department of philosophy, Göteborg University.

Grueter T (2006), "*Picture This, How does the brain create images in our minds?*", Scientific American Mind, vol 17, Number 1, Feb/March.

Hobbes T (1651) "*Leviathan*" eBook, Internet resource: http://www.4literature.net/Thomas_Hobbes/Leviathan/2.html

Hume D (1739) "*A Treatise of Human Nature, Being an attempt to introduce the experimental method of reasoning into moral subjects*". Book One: Of the understanding, Part 1. Internet resource: eBook, www.class.uidaho.edu/mickelsen/ToC/hume%20treatise%20ToC.htm#**

James W. (1890) "*The Principles of Psychology*". New York: Holt. Internet resource: <http://psychclassics.yorku.ca/James/Principles/index.htm>

Kosslyn S.M, (1994) "*Image and Brain*", MIT Press

Kosslyn (1978) "*Visual images preserve metric spatial information: Evidence from studies of image scanning*". Journal of Experimental Psychology: Human Perception and performance, 4, 47-60.

Leahy TM (2000) "*A history of psychology*", Englewood Cliffs: Prentice Hall.

Malmgren H, (2005) "*Presentations, re-presentations and learning*". Festschrift Filosofiska Institutionen vid Göteborgs Universitet, 2005

Marks D.F, (1999). "*Consciousness, Mental Imagery and Action.*" British Journal of Psychology (90) 567-585.

McGinn C. (2004) "*Mindsight, Image, Dream, Meaning*", Harvard University Press

Pylyshyn Z, (2003) "*Return of the mental image: are there really pictures in the brain?*"
Trends of cognitive science, 7, (2003) 113-118

Shepard & Metzler (1971) "*Mental Rotation of Three-Dimensional Objects*", Science
v171 n3972 p701-703

Tye M (1999) "*Image indeterminacy: The picture theory of images and the bifurcation of
"what" and "where" information in higher-level vision*". Spatial Representation,
problems in Philosophy and Psychology, Ed: Eilan et al. Oxford University Press.

Wittgenstein (1967, 1995), "*Zettel*", sec. 621, Bokförlaget Thales, Stockholm

Wundt W (1912) "*Elemente der Völkerpsychologie*" (Elements of Folk Psychology)
Internet resource: <http://psychclassics.yorku.ca/Wundt/Folk/preface.htm>