Lecture 01: Descartes

s.butterfill @warwick.ac.uk

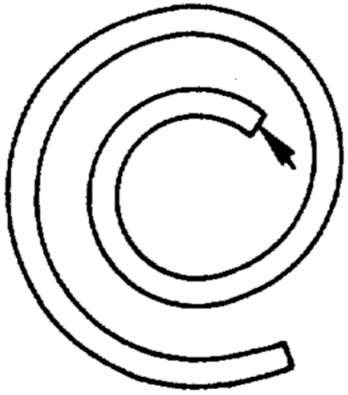
Overall Topic: What, according to Descartes, is the relation between a sensory perception and the thing perceived?

Question for this Lecture: How can we acquire knowledge about the essential nature of the bodies located outside us?

Argument of this Lecture:

1. Sensory perceptions provide only very obscure information about the essential nature of bodies.

2. Therefore, we cannot acquire knowledge about the essential nature of the bodies located outside us through sensory perceptions alone.



1. Exercise

The diagram shows a thin curved metal tube. Imagine you are looking down the tube. A metal ball is put into the end of the tube indicated by the arrow. The ball is then shot out of the other end of the tube at high speed. Please draw the past the ball will follow after it comes out of the tube (McCloskey et al. 1980).

2. Forms

What is an Aristotelian form? It 'is not a subset of the properties that the organism [or thing] has, but rather a set of those that are proper to it, and towards which it strives or tends. Why does an acorn develop into an oak rather than a pig? Because of its special relation to the form that defines oak: it develops as it does because, while still an acorn, it lacks some of the properties that oaks have, and is somehow drawn towards instantiating that form more fully' (Bennett 2003, p. 10).

3. Key Quote from *Meditations*

'I have been in the habit of misusing the order of nature. For'the proper purpose of [...] sensory perceptions [...] is simply to inform the mind of what is beneficial or harmful [...]; and to this extent they are sufficiently clear and distinct. But I misuse them by treating them as reliable touchstones for immediate judgements about the essential nature of the bodies located outside us; yet this is an area where they provide only very obscure information.' (Descartes 1984, pp. 57-8)

4. Impetus

The person who sets the ball moving impresses in it a certain impetus, [which acts] in the direction toward which the mover was moving the body, either up or down, or laterally, or circularly' (Buridan, 13xx; cited by McCloskey et al).

5. Perceiving Impetus

Sometimes when adult humans observe a moving object that disappears, they will misremember the location of its disappearance in way that reflects its momentum; this effect is called *representational momentum* (Freyd & Finke 1984; Hubbard 2010).

The trajectories implied by representational momentum reveal that the effect reflects impetus mechanics rather than Newtonian principles (Freyd & Jones 1994; Kozhevnikov & Hegarty 2001; Hubbard et al. 2001; Hubbard 2013). And these trajectories are independent of subjects' scientific knowledge (Freyd & Jones 1994; Kozhevnikov & Hegarty 2001). Representational momentum therefore reflects judgement-independent expectations about objects' movements which track momentum in ac-

cordance with a principle of impetus.[1]

'the representational momentum memory shift for a ball following a spiral path after exiting a tube is greater than the memory shift for a ball following the physically correct linear path. A curvilinear path, midway between the spiral and straight paths, produces shifts midway between those for the other two paths' (Freyd & Jones 1994, p. 975)

Yet 'our subjects had relatively accurate conscious knowledge of the trajectory of a ball exiting a spiral tube (63(Freyd & Jones 1994, p. 975)

'subjects showed a memory shift for a path that the majority of subjects did not consciously consider correct' (Freyd & Jones 1994, p. 975)

Aristotelian physics 'is reasonably effective for organizing bodies of knowledge. From the perspective of modern physical and biological science, however, it is severely crippled by its close linkage with what Wilfrid Sellars calls 'the manifest image', i.e. what is available to us by means of our very limited sense organs. . . . The tie to entities known through perception prevents access to—much less the discoveries of—modern physics (and, consequently, chemistry and biology)' (Turnbull 1988, p. 120 cited by Bennett 2003.)

6. Books

Core text: (Descartes 1984).

Useful background (find one you like):

- Broughton, Janet 2002. Descartes' Method of Doubt. (Princeton University Press)
- Hatfield, G. 2014. Descartes' Meditations [The Routledge Guidebook to]. London: Routledge.
- Newman, Lex "Descartes' Epistemology", The Stanford Encyclopedia of Philosophy (Winter 2016 Edition), Edward N. Zalta (ed.).
- Williams, B. 1978. Descartes: The Project of Pure Inquiry. Hassocks: Harvester Press.
- Wilson, Margaret. 1978. Descartes (Routledge).

Tip: Hatfield is an invaluable reference. Any time you write about a passage from the Mediations, check what Hatfield writes about that passage.

References

Bennett, J. (2003). *Learning from Six Philosophers: Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume*, volume 1. Oxford: Oxford University Press.

Descartes, R. (1984). *The Philosophical Writings of Descartes*, volume II. Cambridge University Press.

Freyd, J. J. & Finke, R. A. (1984). Representational momentum. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *10*(1), 126–132.

Freyd, J. J. & Jones, K. T. (1994). Representational momentum for a spiral path. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *20*(4), 968–976.

Hubbard, T. L. (2005). Representational momentum and related displacements in spatial memory: A review of the findings. *Psychonomic Bulletin & Review*, *12*(5), 822–851.

Hubbard, T. L. (2010). Approaches to representational momentum: theories and models. In R. Nijhawan & B. Khurana (Eds.), *Space and Time in Perception and Action*. Cambridge: Cambridge University Press.

Hubbard, T. L. (2013). Launching, Entraining, and Representational Momentum: Evidence Consistent with an Impetus Heuristic in Perception of Causality. *Axiomathes*, *23*(4), 633–643.

Hubbard, T. L., Blessum, J. A., & Ruppel, S. E. (2001). Representational momentum and Michotte's 'launching effect' paradigm (1946/1963). *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *27*(1), 294–301.

Kozhevnikov, M. & Hegarty, M. (2001). Impetus beliefs as default heuristics: Dissociation between explicit and implicit knowledge about motion. *Psychonomic Bulletin & Review*, *8*(3), 439–453.

McCloskey, M., Caramazza, A., & Green, B. (1980). Curvilinear Motion in the Absence of External Forces: Naive Beliefs about the Motion of Objects. *Science*, *210*(4474), 1139–1141. ArticleType: research-article / Full publication date: Dec. 5, 1980 / Copyright © 1980 American Association for the Advancement of Science.

[1] Note that momentum is only one of several factors which may influence mistakes about the location at which a moving object disappears (Hubbard 2005, p. 842).