

What are Thought Experiments?

“Thought experiments are strange: they have the power to present surprising results and can profoundly change the way we view the world, all without requiring us to examine the world in the way that ordinary scientific experiments do.”¹

Some Characterisations

- (1) “A thought experiment is an experiment that purports to achieve its aim without the benefit of execution.”²
- (2) “A thought experiment is an experiment carried out in our imagination. It is a device used both in science and philosophy. In a thought experiment, we imagine a certain situation, we follow through some of the consequences of that situation, and then we draw a general conclusion—typically, a certain theoretical claim.”³
- (3) “A thought experiment can be understood as a hypothetical or counterfactual scenario from which inferences are drawn.”⁴
- (4) “It’s difficult to say precisely what thought experiments are. Luckily, it’s also unimportant. We know them when we see them, and that’s enough to make discussion possible. A few features are obvious. Thought experiments are carried out in the mind and involve something akin to experience; that is, we typically see something happening in a thought experiment. Often there is more than mere observation. As in a real experiment, there might be calculating, some application of theory, guesswork, and conjecture. The best way to get a grip on what thought experiments are is to simply look at lots of examples.”⁵
- (5) “*a.* Thought-experimental reasoning involves reasoning about a particular set of circumstances (which may be specified in more or less detail), described at a greater level of specificity than that of the conclusion. (*To perform a thought experiment is to reason about a scenario...*)
b. The reasoner’s mode of access to the scenario is via imagination rather than via observation. (*... which is imaginary...*)
c. Contemplation of the scenario takes place with a specific purpose: the confirmation or disconfirmation of some hypothesis or theory. (*...with the aim of confirming or disconfirming some hypothesis or theory...*),

1 Gooding, D. C. (1998). Thought experiments. In E. Craig (Ed.), *Routledge Encyclopedia of Philosophy*. London: Routledge. <http://www.rep.routledge.com/article/Q106>

2 Sorensen, R. (1992). *Thought Experiments* (p. 205). New York: Oxford University Press.

3 Daly, C. (2010). *An Introduction to Philosophical Method* (p. 101). Buffalo NY: Broadview Press.

4 Bokulich, A. (2001). Rethinking Thought Experiments. *Perspectives in Science*, 9, 285–307 (p. 285)

5 Brown, J. R. (2004). Peeking into Plato’s Heaven. *Philosophy of Science*, 71, 1126–38 (p. 1126)

and—in the case of scientific thought experiments—

d. The hypothesis or theory in question concerns features of the physical world. (... *about the physical world*)”⁶

- (6) “Thought experiments are usually employed by philosophers as a tool in conceptual analysis. We pose ourselves questions such as ‘Would it be the same *F* if *p*’ or ‘Would it count as knowledge if *q*,’ where *p* and *q* state some bizarre circumstances that are unlikely actually to occur and may even be beyond current technical possibility.”⁷
- (7) “The central idea behind the thought-experimental method runs roughly as follows. Suppose that we want to test a claim made by some scientific theory (and hence to test the theory); suppose we want to see what might follow if certain theoretical claims were true; suppose we want to examine the plausibility of some philosophical theses or principles; suppose we want to examine the range and scope of a concept. It may be appropriate, in all these different domains, to ask a ‘what if ...?’ question. Such a question typically postulates an imaginary state of affairs, something that does not in fact happen in the real world. Put another way, in the modern jargon, we imagine a ‘possible world’ in which the state of affairs actually occurs—a world like our own in all relevant respects except for the existence in that world of the imagined phenomenon. [...] Then we try to draw out the implications—‘what we would say if’ that imagined set-up were to obtain; that is, if we inhabited that possible world. By such means [...] we may, perhaps, get weaker or stronger reasons for thinking a scientific claim to be true or false; for concluding that a philosophical thesis is plausible or implausible; or for claiming a discovery about the limitations and scope of one of our everyday concepts. Both elements in the label ‘thought experiment’ are important. Such forays of the imagination are called thought experiments precisely because they are imaginary, they cannot be realized in the real world. [...] But they are none the less thought experiments because, to be of any value, they have to obey many of the constraints on experimentation. In particular, we must be clear just what (in the imaginary scenario) remains constant, and what has been altered in thought. This is, as we shall discover, a crucially important factor in their success or failure.”⁸

Questions for Discussion.

Which of these characterisations do you like best or least? Why?

Are there any significant differences or similarities between these characterisations?

6 Gendler Szabo, T. (2004). Thought Experiments Rethought—and Reperceived. *Philosophy of Science*, 71, 1152–63 (p. 1155)

7 Robinson, H. (2004). Thought: Experiments, Ontology, and Context-dependent Truthmakers. *The Monist*, 87, 537–53 (p. 537)

8 Wilkes, K. V. (1993) *Real People: Personal Identity without Thought Experiments* (p. 2). Oxford: Clarendon Press.

