



Universiteit
Leiden
The Netherlands

Review of "Simulating Minds: The Philosophy, Psychology, and Neuroscience of Mindreading", by Alvin I. Goldman (2006)
Schlosser, M.E.

Citation

Schlosser, M. E. (2008). Review of "Simulating Minds: The Philosophy, Psychology, and Neuroscience of Mindreading", by Alvin I. Goldman (2006). *Philosophy In Review*, 28, 264-267. Retrieved from <https://hdl.handle.net/1887/17783>

Version: Not Applicable (or Unknown)
License: [Leiden University Non-exclusive license](#)
Downloaded from: <https://hdl.handle.net/1887/17783>

Note: To cite this publication please use the final published version (if applicable).

Simulating Minds: The Philosophy, Psychology, and Neuroscience of Mindreading. By Alvin I. Goldman. (Oxford: Oxford University Press, 2006. Pp. ix + 364. Price \$28.)

Published in *Philosophy in Review*, 8 (2): 264-267

This is the author's copy, which may differ from the final print version

In *Simulating Minds* Alvin Goldman provides the most comprehensive defense of a simulation-based theory of mindreading to date. Mindreading is the activity of attributing mental states: representing an individual as having certain mental states. We can distinguish between theories of mindreading, theories of the nature of mental states, and theories about the acquisition of mindreading skills. Goldman frequently touches on metaphysical and developmental questions, but the main focus is mindreading: which processes are operative and which abilities are exercised when we read the minds of others (or ourselves)? There are three main positions: the rationality theory (RT), the theory-theory (TT), and simulation theory (ST).

RT says, very roughly, that to mindread is to rationalize behavior: to assign mental states that render the target-subject's behavior rational. According to TT, mindreading proceeds by way of inferences from beliefs about the target's behavior and environment to conclusions about its mental states. Crucially, these inferences are mediated by knowledge about psychological laws and generalizations. TT says that mindreading is theoretical reasoning about mental states. ST denies that, and it denies, most importantly, that mindreaders must deploy knowledge about psychological laws (explicitly nor implicitly). According to ST, mindreading proceeds by way of simulating the process that resulted (or is expected to result) in the target-subject's behavior. If we predict a decision, for instance, we first imagine and pretend to have the same initial mental states. Then we use our own reasoning-mechanism to make a decision, but instead of executing it, we project the decision onto the target.

Goldman devotes one chapter to the rejection of RT. One main objection is that RT cannot capture the attribution of mental states other than propositional attitudes, as feelings and emotions are not adequately governed by rationality constraints. The main opponent, however, is TT, which has been the predominant position in the cognitive sciences,

psychology and philosophy. In two chapters Goldman provides plenty of evidence and argument against its main versions: the child-scientist theory (CST) and the modularity theory (MT). It has been argued that the results of so-called false-belief tasks count in favor of CST, albeit only indirectly. Goldman argues convincingly that there is a better explanation of the evidence which favors ST. Moreover, CST faces difficult questions. For instance, if acquiring mindreading skills is really like constructing a scientific theory, then it is more than surprising that all children acquire the same theory of mind at roughly the same age. MT meets this worry. MT is a form of nativism, and it postulates a specialized and innate mindreading-module. Goldman, however, argues that mindreading does not satisfy the conditions for modularity. Most importantly, it is questionable that mindreading is informationally encapsulated: when we attribute mental states, we sometimes access beliefs about the world, for instance. Further, it is not obvious that modularity would favor TT over ST. Goldman argues that MT and ST are not “worlds apart”, as some have suggested.

There was a focused debate on TT *versus* ST. More recently, though, the rivalry between the two approaches has been questioned and *hybrid* theories have been put forward. Goldman agrees: the question is not whether either TT or ST is true, but whether simulation plays a significant and irreducible role in mindreading. The book defends a ST-TT hybrid, according to which many instances of mindreading are based on simulation, and which allows that some instances may be, or even must be, supplemented by theorizing. ST’s proper opponent is not TT by itself, but any version of TT which denies or neglects the role of simulation.

Goldman’s theory provides a hybrid and a *dual* account of mindreading. In two long chapters, Goldman introduces and defends what he calls lower-level and higher-level simulation-based mindreading. A paradigm example of lower-level mindreading is face-based emotion recognition. Goldman argues for a reconstruction that is based on mirror-neuron mechanisms. Low-level simulation is fast, automatic, and largely beyond the level of consciousness. It does not involve pretense and perspective-taking, but consists only in the fact that the two processes of experiencing a certain mental state and recognizing it in others *resemble* each other in the relevant respects. Evidence comes from experiments and brain-scans, which suggest that recognizing a certain type of emotion, for instance, is to a

significant extent realized by the same neural mechanisms that realize experiencing that emotion. Higher-order simulation is usually under voluntary control, accessible to consciousness, and it involves perspective-taking (or enactment-imagination). Goldman presents evidence in support of the claim that we frequently and accurately enact-imagine the situations and mental states of others. Further, empirical evidence concerning egocentric-bias in mindreading supports the ST approach.

In the remaining four chapters, Goldman considers a number of interesting topics, such as the ontogeny and evolution of mindreading skills, mimicry, fantasy and fiction, and moral empathy. Goldman deals with the difficult topic of first-person mindreading, and he suggests that self-attribution is facilitated by a special mechanism for introspection (or self-monitoring). In connection with that, Goldman offers an introspection-based account of our concepts of mental states.

The book introduces an impressive amount of evidence from behavioral and neurosciences, which is presented with clarity, very effectively, and without assuming prior knowledge. In most cases, Goldman presents only as much detail as is necessary in order to see why the evidence supports a certain conclusion. The downside of this efficiency is that it is sometimes difficult to assess whether the offered account is the best or the only plausible interpretation of the evidence. In some few cases the account is all-too brief. In support of higher-order simulation, for instance, Goldman refers to evidence which shows that both imagination and execution of hand movements are controlled by the opposite hemispheres of the brain. He concludes that “imagining a hand movement is apparently executed by the same cerebral mechanism that actually executes movements of that hand” (158). But the claim that the same mechanism is operative hardly follows from the fact that the same hemisphere is active. More detail is required.

Many of the arguments are based on reflective analysis of certain interpretations of scientific evidence. But *Simulating Minds* also has a lot of philosophy proper in it. Some of it is helpful conceptual clarification, and some of it is pure philosophical argument. There is, for instance, a response to Shoemaker’s argument for a constitutive relationship between certain mental states and introspective access to them, and one can find a short reply to the private language argument. Many of the philosophical arguments, however, are rather brief,

and they will hardly convince opposing philosophers. This is not the place to go into any of these arguments. I shall, instead, raise a few general and philosophically minded worries.

Firstly, a main objection raised against RT is that it would have to be supplemented with an account of how we attribute feelings and emotions. Likewise, it is argued that TT would have to be supplemented with an account of self-attribution. Goldman suggests that this gives ST a *prima facie* advantage over RT and TT. But Goldman's view is itself a hybrid theory. On many occasions Goldman concedes that ST is also in need of supplementation. In this respect, it is difficult to see here a real advantage for ST.

Secondly, in his account of self-attribution, Goldman argues that a self-monitoring mechanism is most plausibly sensitive to neural rather than functional, phenomenal or representational properties: it classifies mental state types on the basis of what "group of cells are activated" (252). This raises questions concerning the possibility of multiple realization. One function of introspection is to classify mental state types. Could the mechanism of introspection not be sensitive to different physical structures in different species or individuals? Could there not be a more abstract description of the mechanism and the properties that it is sensitive to—one that unifies its multiple realizations?

Thirdly, there are questions to be raised about the claim that TT merely supplements ST. As Goldman presents it, the inputs of a standard routine of high-level simulation are pretend-mental states. The inputs of a standard TT attribution, however, are observed properties of the target-subject's behavior and environment in conjunction with knowledge about psychological laws. So, the inputs of a standard simulation are themselves based on the attribution of initial mental states, whereas a standard TT routine can begin with observational and theoretical knowledge only. *Prima facie*, that constitutes a fundamental difference. TT provides a reductive account of mindreading, whereas ST explains merely how we attribute *further* mental states using simulation. Now, it might still be true that simulation plays an important and irreducible role in mindreading, but TT might play a more fundamental role in mindreading than acknowledged by Goldman.

Nevertheless, *Simulating Minds* is an important book which assembles an impressive amount of empirical and philosophical argument into a powerful case for a simulation-based hybrid theory of mindreading. It serves as a splendid introduction to the debate, and

for philosophers and psychologists working in the area it is essential and highly recommended reading.

University of Bristol

MARKUS SCHLOSSER