On Literary Works as Simulations that Run on Minds

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Abstract

This commentary discusses Oatley's proposal that literary works considered as simulations that run on minds can fulfill similar epistemic functions as computer simulations of mental processes. Whereas in computer simulation, both the input data and the computations to be performed on these data are explicit, only the input is explicitly known in the case of mental simulation. For this reason, literary simulations cannot play exactly the same epistemic role as computer simulations. Still, literary simulations can provide knowledge (e.g., about the phenomenal quality of emotions or about possible emotional dynamics) that is relevant for emotion science: it adds to the corpus of facts about emotions that need to be explained, and it may suggest hypotheses about the constitution of the mechanisms that generate emotions. In addition, the hypotheses suggested by a literary simulation can be tested in new mental simulations. However, at least for the purpose of hypothesis testing, the simulation of a multiplicity of experimentally manipulated scenarios should be more revealing than that of a single literary work describing only one possible course of events.

Keywords

A central claim of Keith Oatley in "An Emotion's Emergence, Unfolding, and Potential for Empathy" is that fictional literature can make an important contribution to the scientific understanding of emotions. In particular, Oatley proposes, literary works can promote the understanding of important aspects of emotions that have been neglected so far, such as the emergence of emotions from relationships, and the unfolding of emotions in protracted social interaction. In his article, Oatley seeks to demonstrate these claims by means of an analysis of the emergence and unfolding of resentment in Iago, the true protagonist of Shakespeare's *Othello*.

In proposing to use fictional literature as a source of psychological insight, Oatley links up with a respectable tradition of psychological theorizing (e.g., Heider, 1958; Shand, 1920). Still, his proposal will probably be met with skepticism by today's mostly empirically minded emotion researchers. To these skeptics, Oatley offers the following interesting argument for his position (see also Oatley, 1999). He argues that the dismissal of fictional literature as a source of psychological insight rests on the misinterpretation of works of fiction as attempted descriptions of psychosocial reality. When interpreted in this way, literary works are bound to appear defective to the empirical psychologist. However, works of fiction can be interpreted in a different way, namely, as (input to) simulations that run on the reader's or viewer's mind. As such, literary works exploit humans' capacity to mentally simulate hypothetical situations and to react emotionally to these simulated scenarios. When interpreted that way (as input that serves to construct and sustain a mental simulation), the question of the "empirical adequacy" of a literary description becomes a secondary issue. The main phenomenon that now counts is the mental simulation it gives rise to in the audience; and this simulation is an occurrent mental process that can be studied (introspectively or otherwise) just like any other ongoing mental event.

Oatley (1999) even goes a step farther. He suggests that, considered as simulations that run on minds, literary works may serve similar epistemic functions as computer simulations of mental processes. Just as computer simulations of vision or problem solving have advanced the understanding of vision or problem solving, respectively, so "fiction as simulation illuminates the problem of human action and emotions" (Oatley, 1999, p. 105). Oatley is careful to note that this analogy is meant as a metaphor, implying that it should not be taken too far. However, to become clearer about what insights can and cannot be gained from literary works considered as simulations that run on minds, it is helpful to explore just how far the analogy can be taken.

A computer simulation of a mental process is a model of this process "running" on a computer. Accordingly, to perform such a simulation, it is necessary to first construct a computational model of the mental process in question. Classically, computational models of mental processes describe them as rule-governed manipulations of symbolic representations. For example, a computational model of decision making might specify a symbol system suited to represent possible actions, the consequences of actions, and the values and probabilities of the consequences; plus rules that determine how an action is selected from the available options on the basis of the values and probabilities of the actions' consequences. In completely specified form, a computational model is a computer program. To run the model, the program is provided with appropriate input data and executed. In the decision-making example, the input data consist of a specific decision problem defined by a set of actions, consequences, and associated values and probabilities. During the simulation, the symbol-manipulation rules are applied to the input data and to intermediate results computed from them. This produces an output stream comprising, in our example, the intermediate steps of

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the decision process (e.g., the computed expected values of the action alternatives) and the final decision taken.

Conducting a computer simulation (developing and running a computational model) can serve a variety of epistemic functions. In particular, computer simulation can help to make a vague theory precise, to uncover hidden assumptions of a theory, to check its internal consistency, and to make predictions about the behavior of the modeled system that are difficult or impossible to derive analytically.

Can performing "literary simulations" fulfill similar epistemic functions as performing computer simulations? When comparing the two, it becomes clear that there are a number of differences. The most important difference is that in the case of computer simulation, not only the input data to a simulation run (e.g., a description of a concrete decision problem), but also the computational model and hence the computations to be performed on the data are explicit. In contrast, in the case of literary works as simulations that run on minds, only the input necessary for simulating a scenario (e.g., the novel or play) is known explicitly (in fact, usually only part of the input is provided; details are left for the reader or viewer to elaborate). These data are "fed" into certain mental mechanisms which then run their course, producing an individualized mental simulation of the depicted scenario, that may also include emotions towards the fictional events and characters. The important point is that when we run a literary simulation, we need not and in fact do not know how the mental mechanisms engaged in the simulation work (on how these mechanisms *might* work, see e.g., Nichols, 2004). That is, a good deal of what happens when we run a mental simulation remains opaque to introspection, just as in the case of nonsimulated experience. For this reason, literary works as simulations that run on minds cannot play exactly the same epistemic role as computer simulations.

Still, I agree with Oatley that literary simulations can yield psychologically relevant insights. In particular, by running literary simulations one can attain certain forms of knowledge subsumed by Oatley (1999) under the rubric "personal insight." These include, in the case of emotions, knowledge about hidden emotion-related personality features, such as emotional dispositions that remained unactualized so far because of lack of opportunity (e.g., one may find out that one is capable of strong hatred); and knowledge of the phenomenal qualities of emotions one has never experienced, and may never experience, in reality. For example, by mentally simulating the predicament of a literary character, one may for the first time get a glimpse of how it feels to be deeply humbled, or to experience bitter resentment. Mental simulation may also be the only way to get an experiential impression of the emotional world of people very different from ourselves (e.g., people from very different cultures). In addition, one may agree that literary simulations can provide insight into the dynamics of emotion, as discussed by Oatley (this issue) under the heading "emergence and unfolding" of emotions—at least in the sense that literary simulations can illustrate the possibilities that exist in this domain.

I agree with Oatley that the described knowledge, attainable through literary simulations, is potentially of great importance for furthering insight into self and others. In fact, literature is often used with this aim in educational settings. I also believe that this knowledge is relevant for scientific psychology in two ways: first, it adds to the corpus of facts about emotions that need to be explained; and second, it may suggest hypotheses about the constitution of the mechanisms that generate emotions—that is, about those aspects of the simulation that are opaque in the case of mental simulation, but transparent in the case of computer simulation.

In addition, the hypotheses suggested by a literary simulation can be tested in new mental simulations. However, at least for the purpose of hypothesis testing, using existing literary works as simulation input may not be the best available option. From the perspective of simulation science, simulations are particularly informative if they are run repeatedly with varying parameters. This suggests that the simulation of a multiplicity of scenarios depicting different developments of the same basic predicament (a form of thought experimentation) will be more revealing than that of a single literary work describing only one possible course of events. As art lovers and individuals searching for personal growth, we may be satisfied with one *Othello*. As scientists, we may need to construct many.

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