

**Reporting on past psychological states:
Beliefs, desires and intentions**

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[*Gap*] Among the data to be explained by Gopnik's hypothesis that young children lack a representational model of the mind (RMM) are children's false reports about their immediately past beliefs, desires, and intentions. The hypothesis applies neatly to the false-belief reports, but its application to comparable reports about past desires and intentions is not made clear.

Three-year-olds, writes Gopnik, "think of belief . . . as a matter of a direct relation between the mind and objects in the world, not a relation mediated by representations or propositions. They think we simply believe *x*, *tout court*, just as, even in the adult view, we may simply see or want *x*, *tout court*, rather than seeing, wanting, or believing *that x*" (sect. 3.2, para. 2). This is a puzzling claim. When *x* is a person, believing *x* without believing *that x* is routine: I believe Ann when she tells me that she lives in Utah, but I don't believe *that Ann* (although I do believe that Ann lives in Utah). When, alternatively, *x* is a statement or proposition, to believe *x* is to believe *that* something is the case. Let *x* be the statement "Ann lives in Utah"; believing *x* while not believing *that Ann* lives in Utah is unimaginable.

To grasp Gopnik's claim, then, one must look further. She contends that a view of belief typical of 3-year-olds "does not . . . allow them to understand cases of misrepresentation such as false beliefs or misleading appearances," and "makes it difficult to understand that beliefs may come from many different sources, that they may come in degrees, and that there are intermediate steps between the mind and the world" (sect. 3.2, para. 3). So perhaps her earlier claim can be put as follows: Three-year-olds view belief as directly and correctly mirroring objects in the world." Their having such a view (rather than a representational model of belief) might help explain why they erroneously report that they believed all along that there were pencils in the candy box and that others would believe this too: If beliefs were always correct, no one would believe that the box contained *candy*.

Three-year-olds sometimes report falsely on their past intentions and desires, as well. Children who had started drawing a red ball but then complied with an experimenter's request to draw an apple reported that they had intended all along to draw the apple. Similarly, hungry children who ate crackers "until they were no longer hungry" subsequently said that they weren't hungry when they started eating. These children, now lacking a desire to eat crackers, in effect claimed that they had no such desire earlier either. Both cases provide analogues of children's false reports that they believed all along that there were pencils in the candy box.

The belief reports are allegedly explained by the 3-year-olds' viewing belief as correctly mirroring reality. If the children who said that they intended all along to draw an apple held the comparable view that reality correctly mirrors intention – or, less figuratively, that all intentions are executed – a parallel explanation of their intention reports could be offered. On the assumption that all intentions are executed, the young artists never intended to draw a ball: If they had so intended, they would have drawn a ball.

Gopnik reports, however, that even 2-year-olds "understand . . . that desires may not be fulfilled" (sect. 3.1, para. 15) and that 3-year-olds construe intentions as desires. So the latter presumably understand that "intentions" may not be fulfilled. If the 3-year-olds' viewing belief as correctly mirroring reality explains their false-belief reports in the candy box study, and they don't similarly view reality as correctly mirroring inten-

tion, *why*, one wonders, do they make the false-intention reports in the drawing case, and *how* is the alleged absence of a RMM supposed to explain those reports?

Gopnik's brief remarks on desire promise some illumination (she says less about intention). "The absence of a [RMM]," she writes, "might also make it difficult for children to appreciate the intentionality of desire; the fact [fact *f*] that objects are desired under a description and that desires may vary as a result of variations in that description" (sect. 3.2, para. 4). Does this help explain the false reports about earlier intentions and desires (or hunger)? Two observations are in order.

First, it isn't obvious that an appreciation of desire's description-sensitivity is required for understanding that, for example, although one doesn't want crackers now one might have wanted some earlier. To be sure, a representation of one's crackers as dry and flavorless is less stimulating than a representation of them as crisp and tasty; but why can't a child who doesn't understand facts of this kind nevertheless appreciate that, at different times, one can have very different attitudes toward very similar objects (e.g., the crackers available earlier and the crackers available now)?

Second, it isn't clear how appreciating that desires may vary as a result of variations in descriptions can help one understand that one's not currently desiring behavior under an apt description like "eating crackers" is compatible with one's earlier having desired behavior under the *same* description. Arguably, what the children need to understand in order to avoid believing (falsely) that they didn't want to eat crackers earlier is that, at different times, one can have very different attitudes toward very similar objects (or toward similar descriptive contents). And *this* understanding is not directly provided by an appreciation of fact *f*.

There is much more to having a RMM, of course, than appreciating fact *f*. My question for Gopnik is this: What differences between a 3-year-old's model of the mind and a RMM do account for the false reports about past desires and intentions? Alternatively, in virtue of what features of a RMM is the frequency of such mistakes reduced once children possess a model of that kind? Plausible answers would significantly strengthen Gopnik's case for the hypothesis under consideration.

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Knowledge of the psychological states of self and others is not only theory-laden but also data-driven

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[*Gol, Gop*] Essential to Gopnik's thesis of the illusory nature of first-person knowledge of intentionality is the claim that our initial understanding of the intentionality of psychological states occurs in parallel for self and other, and that such understanding is theoretical. As such, Gopnik's target article is essentially an argument for the theory-dependence of observation in the case of intentional states attributed to both oneself and others. We believe that in focusing on the theory-dependence of understanding intentionality Gopnik underplays the equally important issue that theories themselves are built on data. What are the data on the basis of which young children build a theory of the intentionality of both their own and others' psychological

states? Gopnik is unclear on this critical point. She suggests (sect. 8, para. 2), "First we have psychological states, observe the behaviors and the experiences they lead to in ourselves and others, construct a theory about the causes of those behaviors and experiences that postulates intentionality, and, then, in consequence, we have experiences of the intentionality of those states." According to this account, the data result from the psychological states that people have. The problem for this view, however, is that no account has been given of how theory builders know that the data they have from their own psychological states can be interpreted in terms of the same conceptual entities as the data they have from the psychological states of others.

To elaborate, experience of the consequences of psychological states, whether intentional or otherwise, differs radically depending on perspective. Take the simple psychological state of someone seeing an object, for example. The datum that is most obvious to theory builders when they are in such a state is the phenomenological experience of the object, the "first-person perspective" (FPP). The existence of the self as observer is not an essential part of this information. In contrast, the datum that is most obvious to the theory builder when observing another person in a similar state is the head/eye orientation of that person, the "third-person perspective" (TPP). The existence of the object of the psychological state is not an essential part of this information. How, then, could the theory builder possibly know that these two pieces of information are in reality instances of the same psychological state? For theory builders to understand that the experiences they have when seeing an object in fact relate to the same kind of event as when another person's gaze is oriented in a particular direction, there has to be some mechanism that provides the knowledge that both self and other exist in similar psychological relations to objects.

So how is the knowledge that self and other exist in similar psychological relations with objects constructed? We suggest (see Barresi & Moore 1992) that the existence of certain forms of social interaction in infancy such as joint visual attention, imitation, and empathy allow matching of psychological states in self and other. These behaviors can be thought of as simulation in action in that actions on the part of one or other participant involved in a social interaction bring about a matching of the psychological relations that both participants share with some object or event in the world. As a result, the young infant has available at certain times information from the FPP and TPP of corresponding psychological relations. For example, in the case of joint visual attention, infants observe another's head/eye orientation (TPP), and in turning themselves, they have available the psychological experience of seeing the object (FPP). In this way, the TPP of another co-occurs with FPP of the self. These two pieces of information may then be combined into a representation of the psychological relation involving both first- and third-person aspects but without its being associated exclusively with either the self or the other. Thus, from the point of view of the theory builder entrenched at this level of understanding, there would be no understanding that both self and other exist in separate psychological relations with objects or events. To achieve the latter understanding, another form of simulation is required – one that occurs in imagination. To understand the psychological state of another when observing that person's TPP, theory builders must imagine the appropriate FPP for the other; for this purpose they must use the self as a model. Conversely, in order to understand the psychological states of self when having some psychological experience, theory builders must imagine the TPP of the self; for this purpose they must use others as models.

To summarize, examination of the data available to the theory builder for understanding the psychological states of both self and other indicates the need for a form of simulation in psychological understanding. It is important to point out, however, that we advocate an account of simulation that is somewhat

different from the others that are available (e.g., Goldman 1989; Gordon 1986, 1992c; Harris 1991). The typical view of simulation, against which Gopnik arrays the evidence, is that it is asymmetric in that self-knowledge is used to understand others. According to our account, not only must the theory builder imagine the FPP in order to understand the psychological relations of others, but in addition, and of equal importance, the TPP must be imagined in order to understand the psychological relations of self. The account is therefore consistent with the findings reviewed by Gopnik showing that the understanding of intentionality, and indeed even of simpler forms of psychological understanding, develop in parallel for self and other.

On the other hand, this view of theory acquisition implies an account of the "illusion of first-person knowledge" of intentionality different from that offered by Gopnik. It is not merely that we are typically more of an "expert" about ourselves than about others (cf. Gopnik, note 10), but rather that we attribute intentional states to self and other based on qualitatively different kinds of data (i.e., the FPP for ourselves contains more elements of "psychological experience" than the TPP for others, which is more behavioral). The illusion occurs because, as Gopnik is surely right in arguing, our act of attributing intentionality is not recognized as such. Instead, it inherits the quality of the data on the basis of which the attribution is made and thus the intentionality presents itself as transparent in the case of the self but typically inferred in the case of the other.

Mismatching categories?

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[Gol] Goldman vacillates between two importantly different versions of "folk psychology" and "analytic functionalism." He maintains that the "chief constraint on an adequate theory of our commonsense understanding of mental predicates is . . . that . . . it should be *psychologically realistic*," explaining that a theory's "depiction of how people represent and ascribe mental predicates must be psychologically plausible" (sect. 2, para. 2). And he says, "What is at stake is the ordinary understanding of the language of the mental" (sect. 3, para. 1). These and numerous other passages are critically ambiguous between (A) a reading that has as its focus what ordinary people actually *do* – how they actually ascribe and use mental-state terms – and (B) a reading that focuses on what ordinary people *think* they are doing – what they reflectively think about ascribing and using mental-state terms. Neither (A) nor (B) serves the goals of "cognitive science."

(B) is a possible reading of Goldman, given passages which imply (B), such as his discussion of Churchland's (1979) eliminativism and his application of Block's (1978) Chinese nation example. Such a reading regards "folk psychology" as the "theory" that ordinary people rely on when asked to reflectively characterize mental states. This is similar to the way that "folk physics" has been used to characterize the "theory" that ordinary people rely on when asked to reflectively characterize why or how certain events occur in the physical world.

(B) is not what Goldman should want. It is irrelevant to what he regards as the "central mission" of cognitive science, namely, "to reveal the real nature of the mind" (sect. 1, para. 1). Though it is possible that ordinary people might come up with a reflective account of the "real nature" of the mind, this is no more likely than that they come up with a reflective account of the "real nature" of the physical world. Moreover, determining the nature of "folk psychology," so understood, would provide no independent reason for thinking that it is true – that it