Fake or Fortune? Appraising the Value of the Perceptual Access Reasoning (PAR) Account

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To get ourselves limbered up, let's perform a quick spelling test given to me by my brother, Tony, when I was nine. I'll help you start the first two. Write or spell out three words:

[1] A term referring to vernacular culture, but also 'people', a genre of music, and a branch psychology referring to everyday attributions of mental states: **F**_____

[2] The act of jabbing your finger into something (e.g., the ribs): **P**_____

 [3] The white of an egg: _____

To understand this monograph requires the sort of mental agility required to perform such a spelling test. In psychology, a common historical pattern is that an empirical paradigm emerges to test a key question and generate new theoretical debates until either the phenomenon is accepted, or a new research task or approach emerges to upset the applecart. As Fabricius, Gonzales, Pesch, and colleagues (2021) suggest in their monograph, *Perceptual Access Reasoning (PAR) in Developing a Representational Theory of Mind*, for forty years, one task has served as the bedrock in our analyses of how the child comes to understand the mind. Despite repeated calls that developmentalists should avoid relying on a single test (e.g., Astington, 2001), false-belief tasks have nevertheless had a methodological monopoly. Similarly, and despite the variation in accounts reported in Chapter I, it is commonplace for researchers to refer to the child's 'theory of mind' (ToM) as if all share an understanding of what this term means.

Several aspects of these studies could have lasting influence. In particular, Fabricius and colleagues reopen a debate from the 1980s about the nature of how the mental and social worlds are understood. Michael Chandler (e.g., 1988) and others were keen to point out the absurdity of the idea that the child gains insight into the complexity of ToM in one single step, an insight evidenced by the child's grasping of false belief. Yet the cacophony of debate among the most-cited scholars on the topic, plus empirical findings suggesting, for example, that even second-order beliefs (i.e., beliefs about someone else's beliefs) could be understood at age 4 (Sullivan et al., 1994), drowned out this critique. At a time when the absurdity has intensified over whether infants have a grasp of the mind (e.g., Paulus, & Sabbagh, 2018), Fabricius et al. should be congratulated in their attempt to reinstate more sensible debate about the child developing social understanding. They provide a

series of studies showing that there is a delay in children's performance on variants of false-belief tasks that others have used as control procedures. This includes their use of three location false belief tasks and comparisons between ignorance and false belief. Each study suggests a more complex developmental progression than a one-shot acquisition. As a result, they offer an account that has all the appearances of John and Eleanor Flavell's accounts of perspective taking in the 1970s and early 1980s (e.g., Flavell et al., 1983).

Just how much the Perceptual Access Reasoning account will change theory and research on social understanding depends, I suggest, on three factors, each of which will require further exploration. First, we need to be more cautious about what the data presented in the studies described by the Fabricius et al. monograph (2021) actually show. No study is without slightly ambiguous findings. The sample sizes are a little small to give us confidence that the data are generalizable and reliable. In addition, several of these studies use repeated-measure designs to make the most of these small samples, but there is little detailed analysis of any carry over from one type of trial to another. The vignettes described in some chapters (e.g., Chapter VI) are very complex, and one reading of the results from these tasks is that children are simply guessing at an answer for each trial. The spread of results in Table 8 (p. 91) offers a hint of a pattern that supports the PAR account, but the observed data can also fit predictions from other accounts.

Similar concerns can be raised about the longitudinal study described in Chapter IX in which children's performance at both ages was relatively low. It appears to show a more general shift from reality-based responses at the younger age, to more consistent belief-based reasoning responses at the older ages. Given that every study contains similar issues related to the signal-noise ratio, conclusions about empirical support for PAR must be considered highly tentative, and in need of more detailed investigation.

Secondly, further research is needed to look more closely at each of the individual methods employed in the monograph. Fabricius and colleagues use tasks developed by others and, with either a simple replication or with only modest changes in procedures, they report very different results and come to different conclusions. Although the manipulations are inventive and may force reconsideration of the received wisdom, I remain unconvinced that the observed fragility of children's performance clearly demonstrates the protracted nature of development (even though I subscribe to such a view).

At the heart of the PAR account is the idea that children believe that protagonists simply get things wrong. An alternative explanation is that in each of the studies reported in the monograph, the somewhat noisy data generated demonstrate that children have an ability to read the intentions behind the experimenter's actions and questions. Just as some adults will spell the white of an egg 'y-o-l-k' when primed to do so (please check your answer to the spelling test at the start of this commentary: the answer is of course 'albumen' rather than 'yolk'), the children's responses may simply reflect a search for meaning behind questions asked of them. The participants' explanations in Chapters VII and VIII were sought to get into the child's own mindset, but here experimental developmental psychology lags woefully behind its clinical and forensic wings, where the nature of adult-child discourse is analyzed in minute detail (e.g., see Brown & Lamb, 2015). I'm not at all convinced that these chapters pass muster, as it's very amateur to think that you are getting at the child's reasoning by asking "Why does [*person*] think that…?" and then, irrespective of what the child has just said, respond, "What a great answer. … Can you give me another one?" Even 36% of adults' responses in the no-belief condition contained references to mental states (see Fabricius et al., 2021, p. 104).

Investigators of PAR and the studies upon which these chapters are based need, at the very least, to probe children's understanding with more than such simple, potentially misleading, questions. Once their data are replicated and extended to additional and more representative samples using multiple interrogation methods, PAR theorists would then need to explain connections between their data and a wealth of other domain-specific and general skills, like language (e.g., Milligan, Astington, & Dack, 2007).

Thirdly, and most importantly, as a "theory," PAR is as yet underspecified. Flavell's theory of perceptual access was far more detailed, and involved clearer and more closely defined transitions from one stage to another. PAR relies upon two 'rules' with little attention to how these fit together. The child is said to act on a "nonrepresentational conception of knowing" (Fabricius et al., 2021, p. 18). While there has been spirited support for a form of knowing that is neither representational nor, indeed, founded on belief (e.g., Silva, 2019), the kind of understanding at issue is knowledge picked up incidentally, not the focus of explicit attention between two interlocutors. It is not clear what the authors exactly mean by this term, even though it is crucial to the construction of their case. There seems to be an inherent contradiction in how the two rules of PAR might fit together. If a child fails to grasp that a particular person's memory persists (Rule 1), why should that child assume that the person will go to the incorrect location (Rule 2, see p. 18)? Without a detailed analysis of how the child might develop and use such contrasting rules, it is unclear how PAR works, leaving me concerned that the term "nonrepresentational conception of knowing" simply acts as a smoke screen.

In the popular BBC TV show—*Fake or Fortune?*—works of art are subjected to a series of scientific tests such as examinations of the age of the paint, the layers underneath the surface, and historical documents which might reveal the true identity of the work. The difference between PAR and traditional theory of mind accounts is that PAR proposes that at around four years, children simply assume that an agent (e.g., Maxi) doesn't know something, and will therefore not act 'correctly.' Thus, the child reasons that Maxi will go to the "wrong" location in a change-of-location task or respond with the "wrong" contents in a deceptive contents task simply because Maxi is expected to get it 'wrong.'

To assume that children do this with only a grasp of (and motivation towards) perceptual access is convenient, but I suspect that the sort of forensic work conducted in *Fake or Fortune?* may show that the surface analysis presented by Fabricius et al. (2021) both misrepresents the child's-eye view of the task and neglects the fact that the product of these tasks (the child's response) is the consequence of an interaction between child and adult who are attempting to establish a shared understanding. The PAR account seems to rely too much upon the solipsism of the dominant ToM theories which explain development in terms of the nature of internal, detached mental representations ("to understand that knowing persists requires an understanding that knowledge is stored as a mental representation" as summarized by Fabricius et al., 2021, p. 18). They pay lip-service to the idea that parents and children 'co-construct' mental state terms, but to them these shared interactions are a means of orienting the child to 'seeing' or 'knowing.' The theoretical position is individual and dualistic in that the word 'knowing' refers to internal representations. My suspicion is that if the PAR account is to last, it needs to accommodate accounts in which the child's access to mental states is understood within their social interactions. Grasping that someone should do something 'wrong' is more likely part of the difficult process of working out people's perspectives on the world and discussing the content and meaning of another person's perspective with an interlocutor.

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