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# Three Perspectives on PAR: The Data, the Self, and the Uncle in the Bear Costume

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Each commentator on our *SRCD Monograph* (Fabricius et al., 2021) brings a career's worth of experience thinking about the development of children's theory of mind. In his Commentary, Lewis alerts readers that the *Monograph* requires "the sort of mental agility" used to see everything in a new way. We are gratified that the commentators concur that there is a pressing need to take the issues that PAR theory raises seriously: "The systematic argumentation and analyses warrant, and will elicit, thorough scrutiny" (Bartsch, p. 2); "Several aspects of these studies could have lasting influence" (Lewis, p. 1); "In sum, there is much need for further discussion of the multifaceted PAR theory" (Sodian, p. 4). This is an exciting time for theory of mind.

Each commentator offers a unique perspective, and each one's penetrating insights are invaluable in moving the field forward. Sodian challenges the empirical findings with alternate explanations, Lewis challenges the philosophy of mind at the foundation of our approach, and Bartsch engages with several aspects of the theory that challenge our intuitions about young children's theory of mind. Each Commentary deserves a far more in-depth reply than can be given here; together, they have sparked a separate paper in which we take the opportunity to elaborate the theory around the points raised in the commentaries (Fabricius, Gonzales, Pesch, & Weimer, 2022). Below, I very broadly outline our response to what we see is the heart of the matter in each Commentary.

Alternate explanations of the empirical findings generally appeal to greater performance demands in tasks where PAR is theorized to lead children to fail. Sodian offers a positive alternative in which early reasoning about perceptual access and knowing is directed by implicit understanding of beliefs. Any alternate explanation offered for one task, however, should be able to account for the pattern of findings across all the other tasks and conditions in the *Monograph* at least as well as the PAR account does. Moreover, if alternate explanations did account for the overall pattern of findings, it would mean that no method had yet been found to remove the logical confound in false belief tasks between PAR and belief reasoning, leaving the standard account that passing false belief tasks signals understanding representational ToM unchallenged, but unsupported.

Lewis points out that PAR theory subscribes to the philosophy of mind that is dominant in cognitive psychology, because the PAR concepts of seeing and knowing are taken to be internal, context-free representations. We agree with Lewis that a fundamental problem is how the conceptual ToM system might interact developmentally with a dynamic ToM system, in which what develops is practical, implicit knowledge of how to interact with others in contexts of shared intentions and practical activity involving emotions, desires, perceptions, beliefs, etc. Both levels of development of ToM warrant study, and we would like to suggest that where the two necessarily intersect is the self. The dynamic ToM system depends on some kind of non-representational experience of the self within practical activity, and the fully developed conceptual ToM system depends on awareness of the self having thoughts. One implication of PAR-users' unawareness of having representational thoughts is that they would thereby lack the means by which to develop an autobiographical self.

Bartsch speaks for many when she says that, "Intuitively, it is hard to conceive of a 6- or 7-year-old with no conception of mental representation" (p. 2), but she challenges herself to imagine PAR in action in a real-world example. Her engaging example is the reverse of the decidedly non-real-life story of Little Red Riding Hood. In the fairy tale, the reality (wolf) is scary and the costume (grandmother) is friendly; in Bartsch's example, the reality (uncle) is friendly and the costume (bear) is scary, and the sister "watches her uncle put on a bear costume to chase after the girl's twin brother, who runs away crying and hides in a closet" (p. 2). Bartsch leads readers through the looking-glass of the compelling intuition that the sister simply must, like us, understand that her brother has a false belief, and that she really must understand his emotional reaction as stemming from the belief. Viewed from the PAR side, without perceptual contact with what an object is (in this case the uncle), the mere appearance does not cause a belief about what it is. Thus, the PAR-sister reasons that her brother can't see his uncle, doesn't know it's him, so he acts wrongly and runs away, just like Little Red Riding Hood, who doesn't know it's a wolf and who makes a bigger mistake. PAR-users understand that Little Red Riding Hood at the door does not know it's a wolf inside, but they nevertheless think she is afraid (Harris et al., 2014), because without understanding that she has a false belief that it is grandmother, they must fall back on the objective situation to predict the granddaughter's emotion. Likewise, the sister would not anticipate that brother will be scared of his uncle (in the costume). But when she sees him running, and understands that he doesn't know it is uncle, she understands that he is scared.

Bartsch also draws attention to several important issues. One is how observational studies of behavior in real conversations and contexts could contribute to evaluating PAR theory. Observational studies pose challenges given the low frequency of family talk about mental states. A seminar student of mine hit on a simple, direct, and potentially rich method by asking her 7-year-old what it means to see, want, know, and think. The girl gave two examples of knowing: One referred to the practical activity of knowing ("If your friend's coming over you know not to be mean to her."), and the other referred to the autobiographical self ("Or you know that you're going to watch a specific movie.").

A second issue is what mechanism or mechanisms might account for the expanded ToM development that includes PAR. There are likely to be several. The transition from reality reasoning to PAR would involve searching for the meaning of mental state terms. When the parent says, "See the cat," how is the child to know what see means? Learning that seeing and

knowing refer to the mind might require a ToM-specific mechanism of parentally-guided introspective access. Children's own theorizing could play a role later in discovering the PAR Rule 1 causal link between perceptual access and knowing. The transition from PAR to belief reasoning would involve conceptual change and theory change, and so the general cognitive development mechanism of experience of anomaly likely comes into play. ("It must seem like nonsense to a child who has finally arrived at PAR that people can sometimes get it right when they do not have perceptual access in the current situation." *Monograph* Chapter IX, p. 122).

Finally, Bartsch highlights our Final Thought about some of the potential negative consequences of overestimating young children's ToM abilities. Another potential negative consequence is highlighted by what I think is the most convincing case for PAR; i.e., that incorporating the theory into the Belief Understanding Scale (BUS) distinguished those 6-year-olds whom their teachers saw as adjusting well to kindergarten from those who were still struggling. It was not just the reality reasoners, but also those transitioning into, and still using, PAR who were struggling. If new kindergarten teachers are taught that by the time children are 6 years old the great majority have already acquired representational ToM, it would probably raise their expectations of children's school readiness, putting about half of their children who are developmentally on track nevertheless at risk of falling short of their first teachers' expectations of readiness, and at risk of falling into the negative cycle that follows from failure to meet unrealistic expectations.

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