False-belief task know-how

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Abstract
This paper assumes that success on false-belief tasks requires a kind of folk psychological know-how, i.e. gradable knowledge how to perform skilful social cognitive acts. Following Ryle (Proceedings of the Aristotelian Society, 1946, The Concept of Mind, Chicago: The University of Chicago Press, 1949), it argues the folk psychological know-how required for success on a false-belief task cannot be reduced to conceptual knowledge as this would lead to an infinite regress. Within the skilled performance literature, Intellectualists (Stanley and Williams in Journal of Philosophy 98:411–444, 2001) have attempted to solve Ryle’s regress by appealing to automatic mechanisms similar in kind to some Theory-of-Mind explanations of folk psychology. Exploring this similarity, the paper examines the epistemic commitments of two recent pragmatic Theory-of-Mind accounts (Westra and Carruthers in Cognition 158:165–176, 2017; Fenici in Phenomenology and the Cognitive Sciences, 2020) of cross-cultural false-belief task data (Shahaeian et al. in Developmental Psychology 47:1239–1247, 2011). By drawing on Fridland’s (Philosophical Studies 165:879–891, 2012) argument against Intellectualist explanations of know-how, it is argued that neither of these pragmatic Theory-of-Mind accounts can adequately explain gradable folk psychological know-how and escape Ryle’s infinite regress objection if these accounts are indeed committed to Intellectualism. The paper ends by supplementing Fenici’s (Phenomenology and the Cognitive Sciences, 2020) account with the enactive framework to both bolster Fenici’s explanation of false-belief task know-how and avoid Ryle’s regress objection.

Keywords Social cognition · False-belief tests · Folk psychology · Enactivism · Theory of mind · Know-how
1 Introduction

In its most neutral formulation, folk psychology (FP) is an expression referring to the domain of our everyday ways in which we understand each other. In order to examine the development of FP capacities, the false-belief task (FBT) was developed to examine at what level a child’s FP capacities are sophisticated enough to be able to recognize that another person has a false belief. Philosophers and cognitive scientists, Westra and Carruthers (2017) and Fenici (2020), have recently proposed that success on FBTs requires a specific kind of pragmatic folk psychological ability. Importantly, both of these accounts are situated within the Theory-of-Mind framework, as at the minimum, both utilize the standard terminology found within this framework in their examinations and explanations of FP capacities. Even though there is a great variety of accounts within the Theory-of-Mind framework, the usual approach is to claim that what best explains FP is a capacity to ascribe mental states; or in other words, “to report our propositional attitudes, to attribute such attitudes to others, and to use such postulated or observed mental states in the prediction and explanation of behavior” (Garfield et al., 2001, p. 494; cited in Fenici, 2017, p. 309). On this approach, what then best explains this understanding of FBT FP is the acquisition of a Theory of Mind (ToM) that is, the knowledge of a set of rules, or propositions, that express one’s ability to understand the behaviour of agents in terms of their reasons for acting by utilizing the concepts of belief and desire and other propositional attitudes. Nevertheless, there is great disagreement among proponents of the ToM framework regarding whether (1) a ToM is innate or constructed through experience, and (2) how a ToM should be conceptualized in terms of its metaphysical and epistemic commitments.

In taking a nativist ToM approach to explain social cognition, Westra and Carruthers (2017) embrace both the epistemic claim that FP capacities depend on the application of innate conceptual knowledge regarding others’ minds and the metaphysical claim that an innate ToM, understood as a subpersonal automatic mechanism, employs this conceptual knowledge. On this approach, other agents are assumed to be bearers of unobservable psychological states and processes, which one needs to theoretically understand in order to anticipate and explain their behaviour in terms of such states and processes. Nevertheless, as we’ll see, while Fenici’s (2020) account uses ToM terminology, it is more ambiguous in regards to these kinds of epistemic and metaphysical commitments. As such, one of the aims of this article is to examine this ambiguity in order to determine how Fenici’s account should be interpreted. This is done by examining the philosophical commitments of these two rival accounts in their explanations of the mindreading scale, which is a collection of recent empirical cross-cultural belief-based task data (Shahaeian et al., 2011; Wellman & Liu, 2004).

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1 The standard FBTs typically follow the format of Wimmer and Perner’s (1983) original change of location study where children were shown the story of Maxi, who hides chocolate in a cupboard and then leaves the room. While Maxi is gone, his mother moves the chocolate from where Maxi left it into another cupboard. Maxi then returns to the scene and the child is asked to indicate which cupboard Maxi will search for the chocolate. Children succeed on the task when they correctly identify that Maxi will search the original hiding location for the chocolate. According to Wimmer and Perner (1983), the empirical results demonstrate children who succeed on the task are able to attribute to Maxi the false-belief that the chocolate is in the original location.
I focus on Wellman and Liu’s (2004) mindreading scale because it provides important empirical data through examining the social cognitive capacities of children in the standard FBT, the diverse belief test (DBT) and the knowledge access test (KAT). In DBTs, children are introduced to Bill and two locations, a classroom and a playground. The children are then told Bill is searching for his bag, which is either in the classroom or on the playground. Then, the children are asked which location they think the bag is at. Regardless of which location the child chooses, the experimenter tells them that Bill has the opposite belief. Finally, the child is asked, “Where will Bill look for the bag?” (Wellman & Liu, 2004). Answering the test question correctly requires the children to refer to Bill’s belief as opposed to their own belief of where the bag is located. Importantly, as opposed to the FBT, in the DBT children do not need to inhibit their own knowledge of the situation as they do not know where the bag actually is. For this reason, the DBT is considered to offer fewer difficulties than the FBT, which is why children succeed on the test before they can succeed on a FBT.

In KATs, children are shown a closed drawer and asked: “What do you think is inside?” (Wellman & Liu, 2004). Regardless of the child’s answer, she is shown that the drawer contains a plastic toy dog. The drawer is then closed, and the child is asked if she remembers what is inside. Next, Polly is introduced to the scene, and the children are told that Polly has never seen inside the drawer, and then the children are asked a yes/no question if Polly knows what is in the drawer. In order to succeed on the test, a child has to ignore her own knowledge of the plastic toy dog when considering what Polly knows. In contrast to the FBT, this test does not involve false-beliefs. For this reason the KAT is less difficult than the FBT, and this is why children typically succeed on the task before they can succeed on a FBT.

It is important to stress here that the results of these experiments show (1) early competence in that children are able to reliably succeed on the KAT and the DBT in their fourth year of life prior to reliably succeeding on FBTs around 4.5 years-of-age, and (2) cultural variability as while American and Australian children first succeed on the DBT then the KAT and finally the FBT, Chinese and Iranian children first succeed on the KAT then the DBT and finally the FBT (Shahaeian et al., 2011). This data demonstrates the gradability of children’s FP capacities in the early competence of children on these tasks, and in the culturally variable developmental trajectories for succeeding on these various tasks. As these tasks require the appropriate application of different forms of FP abilities, this paper assumes FP is a form of gradable skillful know-how, i.e. gradable knowledge how to perform skillful social cognitive acts.

While Wellman and Liu (2004) developed this empirical methodology that they label the ‘mindreading scale’, as the focus of this article is the novel development of cognitive scientists and philosophers in turning towards pragmatic explanations, it does not consider Wellman and Liu’s own explanation of the scale, as they do not offer such an account. This novel development in appealing to pragmatic tools is important as it offers a new way to understand the effects of situational contexts in the development

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2 While it is still heavily debated as to why there is this cross-cultural variation, it is enough for the discussion here to point out this variation, as the focus here is on the established fact that children reliably succeed on both the KAT and the DBT before the FBT.

3 Gradability as it is used here highlights the need to explain skills in terms of their acquisition and the development of differing levels of competency in an individual and across a population set.
of gradable FP capacities, and the successful application of these FP capacities. As such, I examine Westra and Carruthers’ (2017) and Fenici’s (2020) explanations of the specific kinds of FP gradability required to succeed on these belief-based tasks. Additionally, I do this within the context of Ryle’s (1946, 1949) epistemic distinction between know-how (knowledge how to perform an action or skill) and know-that (conceptual knowledge). Utilizing an objection proposed by Ryle against appealing to conceptual knowledge to explain know-how, this paper rejects both accounts insofar as they imply that pragmatic false-belief know-how requires theoretical knowledge.

The paper unfolds as follows. Section 2 presents Westra and Carruthers’ (2017) explanation of the gradability of the FP know-how required to succeed on these various belief tests. Section 2.1 then (1) examines this account from the perspective of Ryle’s (1946; 1949) discussion on know-how, and (2) argues that their commitment to conceptual knowledge leaves them open to a potent objection. Section 2.2 offers a potential defence of Westra and Carruthers’ account through an appeal to Stanley and Williams’ (2001) account of know-how. Section 3 then presents Fridland’s (2012) argument that Stanley and Williams’ manoeuvre fails to solve the problem raised by Ryle, and argues that this leaves Westra and Carruthers’ account susceptible to Ryle’s objection. Thereafter, Sect. 4 presents Fenici’s (2020) alternative pragmatic ToM explanation of the empirical mindreading scale data, and examines the ambiguous claims of Fenici’s account in order to determine whether Fenici’s account is also open to the same criticism as Westra and Carruthers’ account. Finally, Sect. 4.1 briefly outlines an alternative reading of Fenici’s account that avoids Ryle’s objection and explains the empirical data.

2 The pragmatic development account

In order to account for the empirical data of the mindreading scale, Westra and Carruthers (2017) offer the Pragmatic Development Account (PDA), a nativist ToM explanation of this data and the performance differences within it. In line with nativism, Westra and Carruthers propose that basic FP capacities are innately endowed via a ToM mechanism that utilizes conceptual knowledge in the form of a genuinely metarepresentational concept of belief and the rules that govern belief driven behaviour (Fodor, 1992; Westra, 2016). In order to account for the standard FBT data that indicates most children do not succeed on the test until 4.5 years of age, nativists claim that this appearance of development actually reflects failures of performance of younger children on the task (Leslie, 1994; Scott & Baillargeon, 2009; Westra & Carruthers, 2017). Following this, the PDA claims that nativism is consistent with the developmental and cross-cultural data examined by the mindreading scale and proposes to demonstrate how this is possible.

Compared with other nativist proposals, the novel development of the PDA is its appeal to Gricean pragmatics in order to explain the different developmental trajectories found in the data in order explain the gradability of FP. While nativism is committed to the claim that a ToM is innately endowed with particular core concepts (belief and desire) and basic rules for attribution (such as ‘seeing leads to believing’), the PDA claims that new novel concepts can be acquired and new rules learned, which
may be dependent on an individual’s cultural experiences (Westra & Carruthers, 2017, p. 166). Importantly though, the PDA assumes that a “conceptual-theoretical competence” is required “for passing all the main components of the mindreading scale”, which is innately “present from infancy onwards” (p. 167). Thus, the PDA (p. 167) attempts to “explain the mindreading-scale findings in terms of differential demands on performance” (p. 167).

In terms of explaining the pragmatic differences between the tasks, the PDA claims that in order for a child to know when to apply their ToM knowledge and reasoning capacities, the child has to learn the additional conceptual knowledge that discourse can be about doxastic facts (i.e. others’ beliefs) (Westra, 2016; Westra & Carruthers, 2017). Essentially, the claim that this additional conceptual knowledge is required to succeed on the standard FBT is their explanation of FP know-how, i.e. their explanation of how a child knows when and how to apply their conceptual knowledge of belief and the rules that govern belief driven behaviour in the context of these various belief-based tests. The PDA claims that the DBT, KAT, and FBT feature different pragmatic demands, and children’s success or failure is determined by their capacity to make a correct Gricean inference in interpreting the experimenter’s question in order to apply their innate ToM capacities. It’s important to note that their appeal to Gricean pragmatics again commits them to the claim that conceptual knowledge is essential for FP know-how, as on this framework theoretical inferences are required in order to explain how an individual interprets another agent’s communicative intention.

In order to explain how these tasks feature differing pragmatic demands, it’s important to first understand the PDA’s explanation of the standard FBT data. The PDA argues that there are three ways children could interpret the communicative intention of the experimenter’s question in the FBT. These are: (1) “helpfulness-interpretation”; (2) “Knowledge-exhibiting-interpretation-A”; and (3) “Knowledge-exhibiting-interpretation-B” (Westra & Carruthers, 2017, p. 169). The “helpfulness-interpretation” is where the child believes she is being asked to be helpful towards the protagonist. The “knowledge-exhibiting-interpretation-A” is when the child believes she is being asked to exhibit her understanding of what happened in the story, and is meant to explain where the object in question actually is. Finally, the “knowledge-exhibiting-interpretation-B” is the intended interpretation of the question where the child is asked to demonstrate that she knows the protagonist has a false-belief regarding the location of the object. Importantly, on the standard FBT both the “helpfulness interpretation” and the “knowledge-exhibiting-interpretation-A” will lead to the child failing the FTB by giving the same incorrect answer (p. 169).

The PDA argues that the two incorrect interpretations of the experimenter’s question are the more salient interpretations because “young children do not initially expect people’s beliefs to be a topic for conversation” (Westra, 2016, p. 237). It is only through having a thorough enough history of experiences of social interactions where facts about others’ beliefs are implicated in conversation does the child learn that people’s beliefs can be a topic of conversation. Thus, the main proposal of the PDA is that children must learn that cognitive states (i.e., beliefs) can be a topic of conversation. In order to develop this pragmatic know-how, a child needs to learn through social experiences that “sometimes questions are really invitations for them to display their psychological knowledge rather than requests to be helpful or to display
their knowledge of the worldly facts” (Westra & Carruthers, 2017, p. 174). Once a child has learned that doxastic facts can be a topic of discourse, they will be more likely to interpret the experimenter’s question in the FBT as the knowledge-exhibiting-interpretation-B, which leads to providing the correct answer. Thus, the PDA claims it is learning this additional piece of conceptual knowledge that determines whether a child pragmatically succeeds or fails a FBT.

As for the DBT, the PDA claims that in contrast with the FBT, where the child is told where the target object is actually located, by asking the child where she thinks the object is located, the DBT primes the child to focus on the state of the world. Even though the child does not know where the object is located, this prompting question focuses her attention on the possible location of the target object. According to the PDA, this is what makes it more likely that the child will interpret the experimenter’s question as the knowledge-exhibiting-interpretation-A. Nevertheless, no matter which of the three ways the child interprets the experimenter’s question, all three interpretations will lead to the same correct answer. Thus, unlike on the FBT, where only the knowledge-exhibiting-interpretation-B leads to the correct answer, on the DBT any interpretation will lead to the correct answer. Accordingly, the PDA claims the only way for a child to fail the DBT is either through “mere confusion, which is more likely in younger children” or if the child continues to believe her own initial guess of where the target object is, and provides this as an incorrect answer failing the test and demonstrating the child does not yet have this kind of basic social understanding (Westra & Carruthers, 2017, p. 172).

In regards to the KAT, the PDA first claims that since the task does not suggest the target character has a goal of finding the toy dog, the helpfulness-interpretation is less likely making the KAT easier than the FBT. Importantly though, the PDA claims that unlike the DBT and the FBT, the KAT only requires a yes/no answer. Citing empirical studies (Fritzley & Lee, 2003; Okanda & Itakura, 2008), the PDA claims that children at this age are “strongly biased to answer all yes/no questions positively”, but during the fourth year of life (when children begin succeeding on KATs) this bias weakens (Westra & Carruthers, 2017, p. 173). Additionally, the PDA claims that in order to inhibit this bias and interpret the question correctly, a child needs to recognize when to apply the “seeing leads to believing” principle (p. 173). The claim is that inhibiting this yes-bias is needed in order for the child to then be in the position to apply the “seeing leads to believing” principle. Thus, the PDA claims that performance differences regarding the KAT can be explained and predicted by (1) whether a child can recognize the conversational importance of the “seeing leads to believing” principle, and (2) the development of inhibitory control over the yes-bias.

While the PDA can account for the gradability of the FP know-how required for these various tests, the core of its explanation relies on two key claims: (1) the epistemological assumption that a “conceptual-theoretical competence” is required “for passing all the main components of the mindreading scale” (Westra & Carruthers, 2017, p. 167) and (2) appealing to Gricean pragmatics, which claims an individual’s

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4 Westra (2016, p. 241) claims that reason that doxastic facts are a difficulty for novice speakers is because most conversations omit explicit references to others’ beliefs (Papafragou et al., 2007).
theoretical operations over conceptual knowledge explain how communicative intentions are interpreted. In the next section, I will examine the PDA in light of Ryle’s (1946, 1949) discussion of know-how, and present Ryle’s objection that know-how cannot be explained by appeal to conceptual knowledge.

2.1 Ryle’s regress objection

Crucially, the question of whether conceptual knowledge is required for skilful know-how, such as the kind of FP know-how required to succeed on belief-based tasks, refers to an epistemological debate. For this reason, it’s worth examining the PDA’s epistemic commitments in the light of Ryle’s (1946, 1949) distinction between know-how (knowledge how to perform an action or skill) and know-that (conceptual knowledge) in order to clarify whether the PDA’s epistemic appeals to conceptual knowledge are philosophically sound. In his examination, Ryle (1949) identifies the position that conceptual knowledge and computational processes underlie intelligent practical capabilities as Intellectualism.

Intellectualism is the position that the intelligence of an action is derivative in that the intelligence derives from the intrinsic intelligence of the conceptual knowledge that figures among the action’s causes. For Intellectualism, the difference between behaviour and intelligent skilful behaviour is the difference of being directed via an intellectual understanding of truths regarding how to act appropriately or simply acting. As we’ve seen above, within the context of the mindreading scale data the PDA argues that the conceptual knowledge that ‘doxastic facts can be a topic of discourse’ is exactly what is meant to explain a child’s skilful success across the various belief-based tasks. It is this knowledge that determines whether the child interprets the experimenter’s question in the ‘knowledge-exhibiting-interpretation-B’ way in order to correctly employ their belief-desire reasoning. Thus, the PDA clearly takes an Intellectualist position in its commitment to the claims that conceptual knowledge is required to employ FP skills in order to interpret speakers’ intentions and to succeed on the FBT.

However, after examining the Intellectualist position, Ryle (1949) argued that Intellectualism cannot actually explain the intelligence of skilful behaviour (know-how). His argument focuses on the selection of the conceptual knowledge needed in order to act, and the execution or application of this conceptual knowledge to generate the appropriate intelligent skilful behaviour. Ryle’s conclusion is that a vicious regress ensues for Intellectualist explanations if the processes of selection and application of conceptual knowledge regarding how to perform an intelligent act will also need to be explained in terms of further conceptual knowledge.

To clarify this point, according to Ryle (1949), the crux of the issue is the epistemic claim that know-how can be explained by appealing to an individual’s use of true conceptual knowledge to select the most successful way of acting in a particular situation. The threat of Ryle’s regress argument is that without having a clear way to ground out the account’s explanation of intelligent behaviour, the account fails to solve the very problem it sets out to tackle. The regress occurs when in attempting to explain intelligent behaviour, an account claims that conceptual theoretical knowledge of a
The rule governing the intelligent behaviour is utilized by the cognitive system to produce the intelligent behaviour.

If we apply this analysis to the PDA, then in order for the cognitive system to be able to select the correct rule (innate false-belief knowledge) from its array of conceptual knowledge, the cognitive system has to have known how and why to select rule 1. Nevertheless, if rule 2 (‘doxastic facts can be a topic of discourse’) is claimed to explain when rule 1 should be applied to the system, then, in order for the system to know to select, and apply, rule 2 to apply rule 1, the system would need to know another the rule 3 regarding when and how to apply rule 2 to apply rule 1. However, the explanation cannot end at rule 3, as there will then need to be rule 4, and for rule 4 there will be rule 5, and so on. For this reason, an account that appeals to conceptual theoretical knowledge to explain intelligent behaviour falls into an infinite regress where the explanation itself is never grounded out. Thus, capacities that rely on employing skilful know-how cannot be explained by appealing to conceptual knowledge as this kind of explanation falls into a problematic infinite regress.

As we’ve seen above, within the context of the mindreading scale data the PDA argues that conceptual knowledge is exactly what is meant to explain a child’s success not only across the various belief-based tasks, but their success in any social situation requiring FP skills. However, following Ryle (1946, 1949), FP skilful know-how cannot be solely reduced to conceptual knowledge as this would lead to an infinite regress where the cognitive system would be required to utilize another rule about how to apply the first rule, and so on ad infinitum. Nevertheless, the PDA may be able to avoid Ryle’s regress objection with its claim that it is the ToM mechanism that selects and applies the appropriate conceptual knowledge, as the automatic mechanism would be the endpoint of the explanatory regression. The next section presents just such a defence against Ryle’s regress objection from Intellectualists Stanley and Williams (2001).

2.2 The mechanistic manoeuvre

Stanley and Williams (2001) have argued that appeals to automatic mechanisms can avoid Ryle’s regress problem, and if their proposal succeeds, then it also offers the PDA a way to avoid Ryle’s objection. This is because like the Intellectualists, the PDA claims that it is a ToM, understood as an automatic mechanism, that is responsible for the intelligent behaviour observed in the success on belief-based tasks. Essentially, both the PDA and Stanley and Williams’ claim that automatic mechanisms and conceptual knowledge, are required to bring behaviour into conformity with intelligent skilful know-how. Both accounts explain skilful know-how (forms of intelligent behaviour) by claiming that these capacities consist not simply through the possession of a large body of conceptual knowledge (regarding the ways that will provide an agent counterfactual success in the task at hand), but also through the fact that automatic mechanisms are responsible for applying the needed epistemic states for the agent to align herself to her conceptual knowledge about the activity.

In order to avoid the regress, similarly following Fodor (1983), Stanley (2011, p. 16) claims that “triggering representations is something done by an input system rather
than a central system, by a module rather than a central processor. Such triggering is something we do automatically.” By appealing to an automatic mechanism, Stanley is arguing that Intellectualism can explain how the right conceptual knowledge is selected and applied by the mechanism without reliance on additional conceptual rule-based knowledge in order to explain know-how and avoid Ryle’s regress. Stanley recognizes that in order for this kind of automatic mechanism to solve the regress problem, the mechanism needs to be a brute, non-propositional mechanism that is informationally encapsulated or cognitively impenetrable. Or in other words, the mechanism cannot be systematically or logically related to the beliefs, experiences or knowledge states of the agent; otherwise, the mechanism itself will not be a fixed unintelligent system (Fodor, 1983; Pylyshyn, 1999).

Crucially, the mechanism needs to be this way, automatic and unintelligent, otherwise a further explanation is needed to explain the intelligence of the mechanism. If the mechanism did not function in this way, then it would not be modular or automatic, and it would then still be subject to a form of a regress objection. This is because if the mechanism were itself intelligent, then the explanation cannot stop with the mechanism itself. In order to explain how the intelligent behaviour is produced, the account would need to explain how the mechanism is intelligent in terms of what underlies its capacity to select the appropriate conceptual knowledge. However, if the mechanism is a brute automatic system, then the explanation of how the appropriate conceptual knowledge gets selected can end at the mechanism without falling into an infinite regression. By taking this approach of appealing to an automatic mechanism to account for how the correct theoretical operations are selected in order for the intelligent performance of a practical ability, Stanley’s (2011) account avoids Ryle’s regress objection.

Significantly, the crux of mechanistic explanations is replacing the additional internal theoretical operations required for the selection of conceptual knowledge with an automatic mechanism that does the conceptual knowledge selection itself. While Stanley and Williams (2001) are directly responding to Ryle’s regress objection in defence of Intellectualism, the PDA (Westra & Carruthers, 2017) is taking a commonly held position amongst nativist ToM proponents (Carruthers, 2013; Leslie, 1994; Scott & Baillargeon, 2009) in order to explain FP capacities. Nevertheless, the question remains as to whether Stanley’s argument successfully, and unproblematically, avoids Ryle’s regress objection.

3 Mechanisms cannot escape the regress

As I have shown that the PDA and Stanley share the same epistemic and metaphysical commitments in their explanations of know-how in relying on conceptual knowledge and an automatic mechanism for the selection and application of the appropriate conceptual knowledge, in this section I present Fridland’s (2012) argument against Stanley’s account and re-instance her discussion with respect to the PDA’s explanation of the mindreading scale data. Fridland’s argument hinges on demonstrating that there is an ambiguity in the mechanistic picture on whether the mechanism is merely implementational (unintelligent) or adaptive (intelligent) in its capacity to select the
right conceptual knowledge to produce an appropriate intelligent behaviour. This is because if implementing knowledge is basic and unintelligent as Stanley and the PDA claim, then it’s not clear how an unintelligent system can intelligently select the correct conceptual knowledge (know-that) in order to produce a successful intelligent behavioural response.

As stated above, Stanley (2011) argues that by appealing to automatic mechanisms Intellectualism can explain how the right conceptual knowledge is selected and applied by the mechanism in order to explain know-how and avoid Ryle’s regress. Importantly, for this kind of automatic mechanism to solve the Ryle’s regress problem, the mechanism needs to be a brute, non-propositional unintelligent system that is informationally encapsulated or cognitively impenetrable. The mechanism need not to be totally fixed, as “it can respond in pre-programmed ways to stimuli”, but it can only respond to stimuli in unintelligent ways, i.e. through sensitization (Fridland, 2012, p. 6). This means that while the thresholds at which the mechanism functions can change, such as developing the capacity to succeed on a FBT, the mechanism “cannot change in any way that is adaptable to the general knowledge or experience of the agent” (p. 6). In other words, the mechanism is only able to change in ways that are unintelligent and automatic in themselves in order to avoid Ryle’s regress objection. Crucially, both Fridland (2012) and Stanley (2011) accept that if an automatic mechanism did not function in this way, then it would not be modular or automatic, and it would then still be subject to a form of Ryle’s regress objection.

Central to Fridland’s argument is the claim that Intellectualists can instantiate conceptual knowledge in only one of two ways, the importance of which is highlighted by looking at the gradability of skilful know-how. Fridland (2012, p. 7) uses the example of Phoebe learning to serve in tennis by being taught how by a coach and then spending a few hours practicing. She then asks the question,

“at the end of class, is Phoebe’s serve guided by the same proposition as the one she was taught in the beginning of class, and so, is it just her application of that proposition that has gotten better, or has she learned a new way, and thus, a new proposition that is guiding her serving at the end of class?”

As this is essentially an issue regarding explanations of the gradability of skilful capacities, I re-instance Fridland’s further discussion of this example and her critique of Stanley’s Intellectualist account with the PDA’s explanation of the mindreading scale data. If we assume that the PDA is correct that learning that ‘doxastic facts can be a topic of discourse’ is what makes the essential difference between being able to succeed on the DBT and the KAT and succeeding on the FBT, then the question is how should we understand the integration of this new conceptual knowledge into the ToM mechanism?

Fridland (2012) argues that in order to answer this question, it depends on how the content of conceptual knowledge is individuated, as we can only examine how a cognitive mechanism is supposed to function once we understand the nature of the information it is meant to process. She claims that there seems to be only two possibilities, either a coarse- or a fine-grained way. On the coarse-grained way, conceptual knowledge is conceived in general terms such that the same knowledge facilitates skilfully
doing similar things but in different situations and in different manners. In other words, once this new information is integrated into the ToM mechanism, the mechanism uses this same information to recognize doxastic beliefs are the topic of discourse across various contextually different situations. This coarse-grained way has the theoretical advantages that “one can perform a skill in the same way at different times and under different circumstances” (2012, p. 8), or in other words, the same conceptual knowledge can be appropriately applicable in more than one socio-material situation. Additionally, one would not necessarily have to acquire new information every time they improved a skill.

On the fine-grained way that Stanley (2011) endorses, conceptual knowledge is conceived in more narrow terms, such that doing similar things but in different situations and in different manners requires different knowledge. In this way, the information regarding doxastic beliefs is finely grained in the sense that a child learns this information in a particular social setting such as at the dinner table, the relevant information incorporated into their ToM is something like ‘at the dinner table doxastic beliefs can be the topic of discourse’. Then, in different social settings where doxastic beliefs are the topic of discourse, such as in a FBT, the child’s ToM must rely on the conceptual knowledge of something like ‘in discussions of characters in stories, doxastic beliefs can be the topic of discourse’. In this fine-grained way, conceptual knowledge is conceived of in more narrow context-sensitive terms.

If we consider this discussion in regard to FP know-how as a gradable skill, then the question is, how does the PDA explain how children get better at FP in terms of a developmental trajectory where children first develop the capacity to succeed on the KAT at t1, then they later develop the capacity to succeed on the DBT at t2, and finally even later they develop the capacity to succeed on a FBT at t3?

On a coarse-grained way the PDA should be read as claiming that at t1 when succeeding on the DBT a child knows some contextually relevant way w such that the child has the knowledge relation to the proposition that w is the way to predict others’ beliefs and the child represents w under a practical mode of presentation. At times t2 (KAT success) and t3 (FBT success), the child knows the same contextually relevant way w such that the child stands in the knowledge relation to the proposition that w is the way to predict others’ beliefs and the child represents w under a practical mode of presentation, but she instantiates the knowledge that w is the way to predict better at t3 than t2, and better at t2 than at t1. According to this reading of the PDA, what makes the difference between t1/t2 and t3 is the child learning that doxastic facts can be a topic of discourse. This new information is not a new way, or form, of FP know-how, but instead, it simply helps determine when and how the child should employ the FP know-how their ToM mechanism is innately endowed with. Thus, the PDA on this reading of the claim that new concepts “can be acquired, and new principles of attribution learned, relying both on individual experiences and cultural input” (Westra & Carruthers, 2017, p. 166), such as learning that doxastic facts can be the topic of discourse, is read in the coarse-grained way as claiming that this new conceptual knowledge simply allows the ToM mechanism to know when and how to apply it’s innate FP knowledge.

However, when we examine this reading of the claim closely, we see that a regress problem re-emerges. As we saw from Sect. 2.1, it cannot be the new knowledge itself,
e.g., that doxastic beliefs can be a topic of discourse, that determines when the ToM mechanism employs this knowledge. If this were the case, then the PDA would again fall prey to Ryle’s regress objection. So, it must be read as the claim that once the ToM mechanism has this knowledge, the mechanism now knows when to employ the knowledge in order to then apply the appropriate FP know-how. Yet, on this case, the ToM mechanism is then no longer unintelligent. Instead, the mechanism is almost entirely responsible for the development of FP know-how because while the basic governing knowledge—i.e., conceptual understanding of beliefs and desires and their associated rules—does not change, more conceptual knowledge is added to the mix, i.e. learning the fact that discourse can be about doxastic facts, and the mechanism itself needs to select when this new information is appropriately applicable.

However, this violates the terms of what an automatic mechanism needs to be in order to escape Ryle’s regress argument, i.e. a fixed, unintelligent system that is not responsive or sensitive to the subtleties of what is learned from experience. As Fridland (2012, p. 9) argues, this analysis demonstrates that unintelligent mechanisms cannot be responsible for the intelligence of skilled action, since such action requires a flexibility, holism, and agency that is not characteristic of subpersonal mechanisms. That is, by definition, modular, automatic, noncognitive, informationally encapsulated mechanisms cannot be sensitive to semantic content, responsive to experience, or under the control of the agent in the way that they would have to be for this account to work.

Thus, the coarse-grained way only escapes the infinite regression objection proposed by Ryle by violating the terms of what an unintelligent automatic mechanism needs to be to avoid the regress.

The second, prima facie more promising way to explain this gradability is the fine-grained way of reading the PDA, which is the approach endorsed by Stanley and Williams (2001) and Stanley (2011). On this reading, at t1 a child knows some contextually relevant way w1 such that the child stands in the contextually relevant knowledge relation to the knowledge that w1 is the way to predict others’ behaviour in KATs, and the child represents w1 under a practical mode of presentation. At t2 (and at t3), the child knows a different contextually relevant way w2 (and at t3, w3) such that the child stands in the knowledge relation to the knowledge that w2 (and w3) is the way for the child to predict others’ behaviour in DBTs (and FBTs) and the child represents w2 (and w3) under a practical mode of presentation and w2 (and w3) is superior to w1 as a way of predicting others’ behaviour in this different social and material context. Importantly, what explains the differences between the child’s capacities at w1 and w2 and their capacities at w3 is whether the child has learned that ‘doxastic facts can be the topic of discourse’, and as such, whether the child is correctly orientated to the social situation in order to employ the right set of FP conceptual knowledge.

The first issue that arises by going the fine-grained way is that an ontological explosion of propositions occurs. Fridland (2012, p. 10) argues that this is because if skills are going to be “particularly attuned to the minute details of the environment in which they are performed” then the conceptual knowledge required to implement the skill needs to be able to account for not only the minute details of the environment but also the minute details of the individual’s particular means through which the skill
is manifested. For example, the child needs to know not just the general knowledge that ‘doxastic facts can be a topic of discourse’; but rather, the child needs to know the particular knowledge that ‘doxastic facts can be a topic of discourse in situation x’, where x represents a particular social and material situation such as at the dinner table, playing games, listening to stories, engaging in a FBT, etc. However, if this is the case, then “the number of propositions that will exist in order to govern skill instantiations will be nearly infinite” (p. 10), as a child would need to know an entire set of conceptual knowledge that doxastic facts can be a topic of discourse in various different contextual situations.

However, Fridland (2012, p. 10) points out that this is in part problematic because it works against the explanatory power of appealing to conceptual knowledge, as the advantage of conceptual knowledge is that it is meant to be applicable at “not just at one time in one particular setting, but at multiple times and in multiple environments”. This entails that we would need to learn and know sets of conceptual knowledge, where the members of those sets are particular minutely detailed variations of the same general knowledge, such as doxastic facts can be a topic of discourse at the dinner table, playing games, listening to stories, engaging in a FBT, etc. Fridland (p. 10) argues that these kinds of fine-grained contents “are too particular to be properly construed as states that are composed of concepts”, and that this “specificity of fine-grained propositional contents is in direct contrast with the requirement that concepts are recombinatorial and general”. The explanatory use of appealing to concepts comes from the notion that conceptual knowledge is general and can be applicable at different times, in different places, and in different socio-material situations. Nevertheless, if content is individuated in a fine-grained manner, then this proposal “undermines even the most conservative context-independence of concepts” (p. 10).

While the above is one reason that the fine-grained way is problematic, even if we set this issue aside, there is still the question of whether an automatic mechanism utilizing fine-grained content can explain the gradability of practical skills. If the conceptual knowledge that ‘doxastic facts can be a topic of discourse during x’ (where x stands for however we want to classify the particular socio-material context of a FBT) and an appeal to a ToM as an automatic mechanism are meant to explain the development of a child’s capacity to succeed on a FBT, then this explanation only succeeds when it also explains how the mechanism selects and applies this fine-grained conceptual knowledge. Yet, it cannot be that the conceptual knowledge itself that determines when the mechanism applies the knowledge as this would lead to infinite regress Ryle warns us about. As on the coarse-grained way, the PDA and Stanley are in the awkward position of having to admit that it is the mechanism that selects and applies the appropriate conceptual knowledge. However, it’s not clear how the mechanism itself could know when to select and apply the knowledge because the mechanism needs be an automatic, brute, modular, informationally encapsulated, subpersonal mechanism, i.e. an unintelligent mechanism.

Again, for a mechanism to know when to select and apply the appropriate conceptual knowledge, it “will have to be sensitive and responsive to the relevant properties in its environment and trigger or select the appropriate propositions to match those properties” (Fridland, 2012, p. 12). In other words, the mechanism will essentially have to be intelligent. As in order to perform this function, the mechanism would
require the properties of “sensitivity, flexibility, adaptability, manipulability, etc., that are the hallmarks of intelligence” (p. 13). Yet, as we saw in examining the alternative coarse-grained way, the mechanism itself cannot be intelligent as it violates the terms of what is needed for it to be an automatic mechanism.

Thus, on this fine-grained reading of the PDA, it can only escape Ryle’s regress by appealing to the kind of automatic mechanism described by Stanley (2011), but in doing so, the account then faces another version of Ryle’s infinite regress problem, an insolvable framing problem regarding how the right knowledge is selected for the task. Essentially, the ToM, as an automatic mechanism, would need to either consider all of the changes in the socio-material environment or the system has to know which changes it can ignore. The first is a non-starter as this option magnifies the regress issue as these internal processes would have to have a rule for how to treat each piece of environmental information, and then there would need to be another rule for applying each of those rules, and so on ad infinitum. The second option also fails because it would have to embrace the claim that these internal processes of the automatic mechanism are themselves intelligent, as they are able to flexibly determine in different situations what information can be ignored and what is important. However, this then leads back to the same regress issue plaguing the coarse-grained way.

According to the PDA, if a child successfully utilizes their FP skills to pass a belief-based test, then the child’s successful intelligent action is explained by the child knowing how to utilize FP in this particular situation. However, in following Fridland (2012), I’ve shown that if the child’s FP capacity requires theoretical knowledge in order to act intelligently, then regardless if conceptual knowledge is either coarse- or fine-grained, a child is able to develop their FP capacities to succeed on a FBT only in virtue of the child’s ToM mechanism intelligently selecting and applying the correct theoretical knowledge. However, these claims, combined with the reductio assumption that FP know-how is a kind of conceptual knowledge, generate an infinite and vicious regress of intelligent action and theoretical knowledge. As such, the PDA does not appear to be a promising explanation of FP know-how or the mindreading scale data.

4 The socio-cultural constructivist account

As Fenici (2017, 2020) argues the PDA’s appeal to Gricean pragmatics is problematic on the grounds that numerous authors have challenged the Gricean view’s commitment to the claim that understanding communication requires us to understand the communicative intention of the speaker (see Breheny, 2006; Hutto & Satne, 2015; Shieber, 2009; Taylor, 2012), he offers an alternative pragmatic Socio-Cultural Constructivist (SCC) ToM account of the mindreading scale data. In contrast to the PDA’s nativist ToM claims, the SCC takes an alternative constructivist route in arguing that children slowly develop (or construct) through social interactions a ToM. Central to the SCC’s explanation of the mindreading scale data is the concept of having a ‘scattered mastery’ of the pragmatics of verbal belief reports (Fenici, 2020). This is the claim that children learn in isolated interactional contexts to master the practical commitments associated with the verbal ascription of beliefs to other agents without utilizing a unified meta-representational concept of belief. In addressing the mindreading scale
data, this scattered mastery explains the capacity to succeed on DBTs and KATs, but is unable to explain success on FBTs. Once this scattered mastery is integrated into a meta-representational understanding of the concept of belief utilizable across various contexts, then the child has then acquired a ToM and is capable of passing a FBT (Fenici, 2017, 2020). Crucially, while the SCC claims that the mastery of the kind of FP know-how required to succeed on a FBT is a pragmatic practice that tracks “practical reasons: commitments to goals and concerning facts that can justify behavior” (Fenici & Zawidzki, 2020, p. 18); if this pragmatic practice relies on conceptual knowledge, then the SCC should still be read as having the same problematic epistemic and metaphysical commitments as the PDA and Intellectualism in regards to FBT know-how.

For the SCC, a ToM is defined as “the capacity to attribute mental states to ourselves and to others in order to predict and explain behaviour” (Fenici, 2020, p. 2). As such, ToM is treated simply as a synonym for the more theory-neutral expression ‘mindreading’. Nevertheless, by remaining theory-neutral in its use of the term ToM, the SCC is dangerously ambiguous in regard to whether it is committing to the claim that FBT know-how relies on conceptual knowledge. Reading the SCC in this way is potentially dangerous for the account because as we’ve seen in the preceding discussion, this route leads to inescapable problems. Thus, the rest of this section presents and examines the SCC’s explanation of the mindreading scale data in order to determine how we should interpret the SCC, and whether an interpretation of the SCC can avoid the problems raised above.

To explain how it’s possible to have a scattered mastery of the pragmatics of belief without a ToM, the SCC appeals to a contextual paradigm for semantic understanding, i.e. knowing the meaning of a word. The contextual paradigm holds that learning the meaning of a word amounts to mastering the practice of identifying and applying that word in practice. The SCC claims that this just “requires children to master progressively the use of mental verb labels in the social situations in which they are usually deployed” (Fenici & Garofoli, 2017, p. 105). In other words, knowing the meaning of a word is being able to correctly employ the word in the appropriate situations. As such, agents can learn to use an expression correctly without having a conceptual understanding of the words employed in the expression. For this reason, the SCC claims that success on KATs and/or DBTs reveal that a child has developed a partial, but incomplete, pragmatic understanding of the verbal ascriptions of beliefs.

The SCC claims that children can have a scattered mastery of the pragmatics of verbal belief reports before they develop an integrated mastery, and this scattered mastery does not involve any kind of conceptual understanding of belief, nor a ToM. This is why children can pass either (or both) the KAT and the DBT, and still fail the FBT. To explain this developmental trajectory, the SCC claims that the progressive steps towards a full conceptual understanding of belief that children need to learn to succeed on a FBT are:

(1) in which conditions it is correct to verbally credit an agent with a belief (belief-formation contexts), (2) what are the practical commitments towards action of an agent who has been verbally credited with a belief (belief-use contexts), and
furthermore (3) how aspects (1) and (2) are connected (Fenici & Garofoli, 2017, p. 105).

Mapping these distinctions onto the mindreading scale data, Fenici claims that (1) corresponds to the ability to pass the KAT, (2) corresponds to the ability to pass the DBT, and (3) corresponds to the ability to pass the FBT. Fenici argues that children’s earliest understanding of mental verbs like belief “can be quite naïve and focused on situational rather than intrinsic features” of the verb (Fenici & Garofoli, 2017, p. 105). In this sense, the claim is that children can conform to the linguistic practices of belief-formation or belief-use contexts simply by focusing on the situational features without having a full conceptual understanding of belief as a representational state (Perner, 2010). Then, through repeated exposure to social interactions involving these kinds of contexts, children progressively learn to connect (1) and (2), and thereby translate this scattered pragmatic mastery into a full conceptual, meta-representational concept of belief. At which point, we may say that the child has acquired a ToM.

In order to explicate the SCC’s commitments, we need to look at the details it provides in its explanations of the various belief-based tasks. According to Fenici (2017, 2020), the KAT is best understood as assessing the ability for verbally ascribing beliefs in belief-formation contexts. Unlike the PDA, on this contextual account a child does not need to fully understand the connection between knowledge and perception via something like a ‘seeing leads to believing principle. Rather, through their interactive experiences with caregivers, children learn to be sensitive to others’ ignorance from observing how habitual patterns of social interaction are broken when another agent does not perceive the same particular objects in the shared environment (Carpendale & Lewis, 2006, 2015; Trevarthen, 1977).

In reinterpreting what a KAT specifically measures, Fenici (2020) argues that in order to credit the target agent with ignorance of the target object, children need only consider the fact that the agent has not interacted with them, and so she cannot know what the child knows. On this account, the KAT only assess children’s capacity to recognize when ignorance has been verbally attributed to others, and does not assess whether children have a conceptual understanding of ignorance itself. Thus, according to the SCC, success on the KAT simply requires children to be able to master the pragmatics of verbal belief reports in belief-formation contexts. In this way, children are able to succeed on the KAT without having a full conceptual understanding of belief. Instead, the child only needs to understand the pragmatics of belief-formation attributions in verbal interactions.

Similarly, Fenici (2017, 2020) reinterprets the DBT as assessing the ability for verbally ascribing beliefs in belief-use contexts in the sense that what is assessed is whether a child understands how verbally ascribed beliefs can affect others’ actions. This is because in order to succeed on the DBT, a child only needs to know what kinds of practical commitments agents have when they are verbally credited with specific beliefs. Fenici (2020, p. 12) claims that children capable of succeeding on the DBT have only mastered the ability to notice the “variety of relations between belief self-reports, agents’ behaviour, and environmental conditions.” In this sense, children who succeed on the task may not actually be focusing on the agent’s belief of where the bag is located; but rather, they need only to interpret the experimenter’s statement.
of the agent’s belief as if the agent was covertly making the statement himself. Then when questioned by the experimenter where the agent will search for the bag, the child need only consider the practical commitments of the agent as if the agent had uttered the attributed belief, which indicates the correct solution to the question. For this reason, the SCC claims that children need only understand the practical commitments of agents’ when agents verbally express particular beliefs, i.e. the pragmatics of the verbal reports of belief in belief-use contexts.

Since the capacities for belief-formation and belief-use can be learned and employed situationally independently of one another, there need not be a predetermined path in which children develop these capacities (Fenici & Garofoli, 2017). Thus, the SCC claims that since children can only employ these capacities within situational interactions like the KAT and DBT where the “experimenter assumes on herself almost the whole load of the narrative” (p. 13), which then only requires the child to contribute a small portion of the narrative, these early forms of understanding belief reports do not require a ToM nor a metarepresentational conceptual understanding of belief.

Finally, the SCC argues that an integrated mastery of belief reports is required to reliably succeed on a FBT, which entails conceptually understanding how belief-formation contexts are causally connected to belief-use contexts. Fenici (2017, 2020) claims this integrated mastery is in part necessary because of the scarce conversational scaffolding of the FBT scenario, which places greater demands on the child. For example, when the child sees Maxi put the chocolate in the initial location, the child is not told that Maxi believes that is where the chocolate is now located. Later when being asked the test question, the child is not requested to consider what Maxi knows. Without these verbal prompts focusing the child’s attention on Maxi’s epistemic states, when the child is asked to predict Maxi next action, the child will not spontaneously consider Maxi’s beliefs. This results in the child overlooking the fact that she needs to refer to the beginning of the story as she currently has no perceptual contact with this original location of the chocolate. This leads children to incorrectly answer the question based on what they are currently perceiving in the scenario.

In order for the child to overcome this limited conversational scaffolding and provide the correct answer on the FBT, the SCC claims that children will need to have learned not only the pragmatics of verbal belief-formation and belief-use, but how these practices are causally connected. The SCC argues that by participating in conversations with caregivers, where others’ reasons for acting are explicitly discussed, children develop this integrated mastery of the pragmatics of verbal belief reports. Once this integrated mastery is achieved, it is claimed that children are then able to reliably succeed on FBTs and that they have genuinely acquired an understanding of the concept of belief as a representational mental state, i.e. a fully developed ToM. However, this claim is dangerously ambiguous because it can either be read as appealing to some kind of conceptual knowledge for mediating when these skills should be employed or a claim regarding how social cognitive processes are extend through, or scaffolded by, the socio-material conditions of the context of these kinds of interactions.

In other words, the SCC claims that through experiences of dialogical interaction, children come to master that “the narrative structure of psychological explanations involving an agent’s belief is what allows children to track both the beliefs of an agent
and their related pragmatic commitments across contexts” (Fenici, 2020, p. 16). Nevertheless, depending then on which way we read the SCC’s use of the ToM terminology and its claim that a child requires “the capacity to identify and track beliefs across situations—that is, the conceptual understanding of belief as a representational mental state” (Fenici, 2020, p. 14), the SCC either embraces Intellectualism or is advocating an entirely different way of explaining know-how. If the claim is that in order to succeed on a FBT “children need to learn how to connect scattered information about other minds that they obtain from everyday conversation about mental states into an integrated concept of belief, a concept which scaffolds novel capacities of psychological reasoning” (p. 16), then the question is, should this claim be interpreted as embracing an Intellectualist approach for explaining skilful know-how? If it should, then the SCC faces the same problems as the PDA and Intellectualism. If it shouldn’t, then how else can the SCC explain how this capacity is selected and employed?

As we’ve seen that taking an Intellectualist route leads to inescapable problems, I argue that we should interpret the SCC as advocating an alternative route. By dropping references to a ToM, which offers little explanatory power on its own and introduces ambiguity, in the final section I propose an alternative reading of the SCC bolster by the enactive framework (Hutto & Myin, 2012). This proposed revision of the SCC not only explains the mindreading scale data, but also avoids Ryle’s regress and the other problems raised against Intellectualism.

4.1 An enactive socio-cultural constructivist account

Crucially, there is no a priori reason for ruling out the possibility that FBT know-how can be acquired without acquiring conceptual knowledge. In taking this route, the enactive framework can supplement the SCC as it is valuable in providing a way for explaining how children recognize and respond to other agents’ perspectives and goals in sustained embodied, embedded interactions set within normative social contexts (Jurgens & Kirchhoff, 2019). This is because enactivists formulate their explanations of cognition starting from the basic innate capacity to recognize others as agents and to engage with them, and arguing that from this basic action-orientated capacity through continuous social experiences infants develop the ability to track others’ perspectives (Gallagher, 2015). Then, through further exposure to experiences of basic joint activities (Satne, 2020), infants come to learn to embody and recognize particular patterns of goal-directed behaviour and the local cultural norms (Maiese, 2018) that govern these patterned practices (Kirchoff & Hutto, 2015).

This further enculturation not only shapes how the child sees and interacts with the world, but also shapes the body, including neural networks, to detect and respond to particular kinds of situations. Finally, It is through the development of linguistic capacities and through exposure to narrative practices (Hutto, 2008) that children later begin to develop more mature kinds of FP know-how rooted in pragmatic linguistic narrative practices, of the kind proposed by the SCC, but distinctly non-conceptual.

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5 As Hutchins (2011, P 441) argues, “Cultural practices include particular ways of seeing (or hearing, or feeling, or smelling, or tasting) the world. Cultural practices are not cultural models traditionally construed as disembodied mental representations of knowledge. Rather they are fully embodied skills”.

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With the exception of appealing to conceptual knowledge and a ToM to explain success on a FBT, the SCC’s claims regarding the mindreading scale data mostly align with enactivist explanations. Thus, while the SCC is ambiguous in terms of these claims, enactivists are explicit in their commitment to explaining social cognitive capacities in terms of interactive processes constituted in the dynamic coupling between embodied individuals in situated action.

Like the SCC, enactivists argue FBTs require children to track various perspectives on offer in an particular encountered narrative structure, which allows children to recognize and respond to others’ attitudes and actions in new ways. As a child follows through a narrative being presented to her, her attention naturally shifts, in alignment with shifts in the narrative structure, towards the various perspectives both offered in the story and in relating to the story itself. In this way, practical narrative understanding depends on being sensitive to possible perspectives that may be adopted on events, including—especially—cognitive, emotional and evaluative perspectives that may diverge from one’s own (Hutto, 2015, p. 6). Since this capacity is essentially developed through particular normatively constrained ways of perceiving and acting in the world, this capacity is primarily action-based, and as such, does not rely on conceptual or rule-based knowledge.

In order to explain the standard FBT data on this enactive reading of the SCC, we need to re-examine both the narrative structure and the interactive aspects built into the methodology of the task. In the standard FBT a child experiences two different kinds of perspectives: a second-person interactive relation with the experimenter, and a third-person observational narrative perspective of the agent and the setting within which the agent is embedded. According to enactivists, the reason why younger children fail the FBT is that they systematically respond to the test question from the shared perspective that the child has with the experimenter, i.e. the second-person perspective. As Gallagher states:

\[\text{The child’s answer in the standard test reflects a belief that the child shares with the experimenter about the real location of the toy (in their interaction with each other this shared knowledge becomes the salient feature and motivates the (wrong) answer to the third-person task). The dynamic pull of the interaction with the experimenter wins out in the standard test, which is set up in a way that excludes interaction with the agent (Gallagher, 2015, p. 176).}\]

The second-person perspective is more salient to the child because perspective- and goal-tracking are made easier when one is directly interacting with another person, i.e. when one has a second-person perspective to the other (Király, 2009; Moll et al., 2008). As the children primarily interact with the narrative structure of the FBT via a third-person observational perspective, younger children are more likely to focus on the actual second-person interaction between themselves and the experimenter, which is why they fail the test.

\[\text{Gallagher appeals to Ciaunica’s (2014) argument that in evolutionary terms of survival, moment-to-moment second-person interaction has priority over any third-person observational engagements. Gallagher highlights that there is also a difference in the quality of the second- and third-person perspectives in terms of the specific attraction or affective pull of the interactions.}\]
What then explains why children succeed on the FBT has to do with multiple factors. First, through cognitive development 4.5-year-olds may be better suited to handle the complexity of the multiple perspectives, compensating for the competition between the perspectives, leading to higher engagement with the third-person observational narrative perspective. Second, similar to SCC claims, through further exposure to joint activities and narrative patterns and practices, 4.5-year-olds are in a better position to recognize the goal being assigned to them in the FBT through the normatively structured interaction with the experimenter, which leads to their attending and responding to the third-person observational perspective. Third, these improved practical abilities for perceiving the normative aspects of situations and the importance of particular perspectives combined with more mature narrative abilities allow for an increased cognitive flexibility for responding to more complex social interactions, such as those found in FBTs (Gallagher, 2015).

Nevertheless, unlike an Intellectualist reading of the SCC, having this improved kind of FP know-how does not necessarily demonstrate that a child has acquired a generalizable mature mastery of the concept of belief. Instead, children in a diachronic process of active engagement with experimenter are simply recognizing and responding to the particular interactive and narrative aspects of the FBT, which includes the child recognizing the goal being assigned to them through the interactive and normative structure of the task. It’s important to highlight here that the preceding enactive claims avoid the problems associated with Ryle’s regress because the enactive framework conceptualizes social cognitive capacities as primarily action based, which are realized across the brain, body, and world (including others). The key point is that actions are not dependent on action representations, thus they are not in the business of being fine- or coarse-grained, for there are no contents to be had. As Hutto and Satne (2015) argue, it’s the content that is involved in conceptual knowledge—in form of known propositions or rules—that is problematic, and this is true of the regress problem as well.

Essentially, there is a difference between appealing to a basic action as opposed to conceptual knowledge. Actions themselves do not involve content as neither the environment nor the agent’s body needs to be internally represented in order to perform an action. For enactivism, it is from the foundational capacities to recognize, attend to, and respond to others’ emotions, perspectives, and goals that narrative FP know-how is developed and practically employed. It is precisely by denying that actions are performed via enacting descriptions of how to act (conceptual knowledge) that enactivism formulates its epistemic position, and is why this reading of the SCC avoids Ryle’s regress.7

In conclusion, the PDA faces insurmountable problems in its commitment to conceptual knowledge as necessary to explain FP know-how as its appeal to a ToM mechanism fails to avoid Ryle’s regress objection. Though the SCC is a promising alternative for explaining the mindreading scale data, its in danger of a similar fate because its unclear how we should interpret its central claim and use of ToM terminology. Nevertheless, while I have only briefly shown here how an enactive reading

7 The debate regarding this issue will likely turn on the difference between action and propositional knowledge. Though this is an issue to be taken up elsewhere, see Castro and Heras-Escribano (2019) and Satne (2020) for recent anti-Intellectualist accounts of social cognition that tackle this issue more directly.
of the SCC is able to explain FBT know-how without committing to Intellectualism, it should be clear that this kind of explanation is not only possible, but that it can be done in a way that avoids Ryle’s regress objection.

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