



The pretense debate [☆]

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ABSTRACT

In a number of publications, Alan Leslie and colleagues have developed a theory of the psychological mechanisms underlying pretense. This theory maintains that pretense is an early manifestation of “theory of mind” or “mindreading” – the capacity to attribute mental states to oneself and others. Nichols and Stich proposed an alternative theory of pretense on which pretense in young children does not require mindreading. Rather, they argued, young children have a behavioral understanding of pretense. In a lengthy critique, Friedman and Leslie made a persuasive case that the Nichols and Stich theory cannot account for the early emergence of children’s capacity to engage in joint pretense and recognize pretense in others. In this paper, we set out a new “pretense game” theory of pretense that avoids the problems raised by Friedman and Leslie, and does not require that children who engage in joint pretense must have a theory of mind. We go on to argue that our pretense game theory can explain many of the facts about pretense that go unexplained in Leslie’s theory. The central shortcoming of Leslie’s theory is that it attempts to explain the production and recognition of pretense behavior by positing the existence of an innate concept, without explaining how this concept enables those who have it to recognize or produce pretense behavior.

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1. Introduction

Over the last 25 years, Alan Leslie and his collaborators have developed and defended a sophisticated and influential account of the psychological mechanisms underlying pretense, focusing primarily on pretense in children (German & Leslie, 2001; Leslie, 1987, 1988, 1994, 2002; Leslie & Roth, 1993; Leslie & Thaiss, 1992; Onishi, Baillargeon, & Leslie, 2007). In *Mindreading*, Nichols and Stich (2003) proposed an alternative account that borrowed a number of important ideas from Leslie, while arguing that one central feature of Leslie’s account is problematic and should be abandoned. Friedman and Leslie (2007) responded to Nichols and Stich (hereafter N&S), arguing that the N&S account of pretense is fatally flawed because it cannot account for the capacity to recognize pretense – a capacity which emerges quite early in childhood. In this paper, we have a pair of goals, one positive and one negative. The positive goal is to respond to the Friedman and Leslie (hereafter F&L) critique by showing how, with some

elaboration and reconstruction, an account similar to the one proposed by N&S can address the pretense recognition problems posed by F&L. If our revised version of the N&S theory succeeds in meeting F&L’s objections, it might be thought that the debate has reached an impasse, at least for the moment, since there are two competing theories that can explain the available facts about pretense. However, our negative goal is to argue that this is not the right conclusion to draw, because the theory of pretense that Leslie and colleagues have developed and defended thus far is not a serious competitor to the theory we propose. More specifically, we will argue that the explanation of pretense that Leslie has proposed is importantly incomplete; it does not provide a satisfying explanation for some of the most obvious and important facts about the production and recognition of pretense.

2. Background: some shared assumptions about cognitive architecture

The N&S account of pretense is set out as a series of additions to a widely shared picture of the basic architecture of the cognitive mind. Though Leslie has explicitly embraced this picture only once, in a paper co-authored with N&S (Nichols, Stich, Leslie, & Klein, 1996), we think it is clear that Leslie, like many other theorists, assumes that this account of cognitive architecture is by and large

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correct, though far from complete.¹ So we will begin with a quick overview of the basic cognitive architecture sketched by N&S.² The mind, on this account, contains two functionally different kinds of representational states, beliefs and desires. Saying that they are functionally different is a shorthand way of saying that these two kinds of states are caused in different ways and have different patterns of interaction with other components of the mind. Some beliefs are caused by an array of perceptual processes, while others are generated from pre-existing beliefs via a variety of inferential processes. Some desires (like a desire to eat or a desire to be warmer) are caused by systems that monitor states of the body; others, the “instrumental desires,” are generated via a process of practical reasoning that takes beliefs and pre-existing desires as input. Still other desires are caused by psychological mechanisms whose nature and function are not well understood. In addition to generating instrumental desires, the practical reasoning system must also determine which desires will be acted on at any given moment. When that decision is made, the information is passed on to an assortment of action-controlling systems which coordinate the behaviors necessary to carry out the decision. Using rectangular “boxes” to represent systems storing functionally similar states, and hexagons to represent psychological processes and mechanisms, N&S offer Fig. 1 as a schematic representation of the basic architecture of the cognitive mind.

Both N&S and Leslie combine this basic architectural picture with a representational account of cognition which maintains that beliefs, desires and other propositional attitudes are representational states. On this account, to have a belief or a desire with the content that p is to have a representation token with that content stored in the Belief Box or the Desire Box. Leslie typically assumes that these representations are linguistic or quasi-linguistic in form, and though N&S take no stand on that issue, for ease of exposition, we will go along with that assumption in what follows.

3. Some points of agreement between Leslie's theory of pretense and the N&S theory

Two examples of pretense recounted by Leslie (1987, 1994) have been widely discussed in the literature. In one of these, a child and her mother pretend that a banana is a telephone. The mother holds the banana up to her face and talks to Daddy. She then hands it to the child, who says hello to Daddy. In the other, a child and the experimenter have a pretend tea party during which imaginary tea is poured into a pair of cups, and then one cup is turned upside down and shaken. The child is asked to point to the full cup and to the empty one. Though in reality both cups have been empty throughout the episode, children as young as two typically have little difficulty identifying the cup that has been turned upside down as the empty one. These examples illustrate a central concern of Leslie's theory of pretense. In both cases, it is plausible to suppose that the child is relying on mental representations that “distort reality” by representing states of affairs that clearly do not obtain. But, Leslie asks, “if a representational system is developing, how can its semantic relations tolerate distortion in these more or less arbitrary ways? Indeed, how is it possible that young children can disregard or distort reality in any way and to any degree at all? Why does pretending not undermine their representational system and bring it crashing down?” (Leslie, 1987, 412) The solution Leslie proposes is that the representations underlying pretense “must somehow be marked off or ‘quarantined’ from the

child's “primary representations” – the representations in the child's Belief Box that serve to represent reality as the child actually believes it to be. Though Leslie's primary focus is on pretense in children, it is clear that much the same problem arises for adults engaging in pretense. In the pretend tea party experiment, neither the child nor the experimenter can simply add a representation with the content *the blue cup is full of tea* to the other representations in their Belief Boxes, since they both already have representations with the content *the blue cup is empty*, and the obvious contradiction would presumably lead to untoward consequences for both the pretense and the pretenders.

To deal with this problem, Leslie hypothesizes that the representations that underlie pretense are “marked” in a special way to indicate that their functional role is different from the “primary representations” in the Belief Box. In the terminology Leslie adopts, these marked representations are “decoupled” copies of primary representations which no longer have their “normal input–output relations” or their “normal computational consequences.” (1987, 419) The notational device that Leslie uses to mark the decoupled representations underlying pretense is to enclose them in quotation marks. In his early work, Leslie labeled these decoupled representations “metarepresentations,” though to avoid confusion and make clear that the label is intended as a technical term in his theory, in his more recent work he often prefers the label “M-representation.”

As noted earlier, N&S use “boxes” as a way of representing systems storing functionally similar states. So enclosing pretense representations in quotation marks is simply a notational variant of assigning them to a box of their own. That is the strategy that N&S adopt in their account of pretense. In some of his work focused on the imagination, Nichols (2004) calls this the “pretense box.” But since N&S think that representations in this box also play a role in a variety of other cognitive processes, including counterfactual reasoning and third-person mindreading, N&S decided to label this functional component of the mind the “Possible World Box” (or the PWB).³

After adding the PWB to their picture of cognitive architecture, N&S offer a detailed account of the role that the PWB plays during an episode of pretense. They explain how many Belief Box representations get added to the PWB, how it manages to avoid contradictions, and how the PWB develops a detailed description of the imaginary world in which the initial premise of the pretense – e.g. *We are having a tea party* – is true (N&S, 2003, §2.4, pp. 28–38). Leslie's theory is silent on all of these issues, and though he does offer a few hints (Friedman and Leslie, 2007, 121; Friedman, Neary, Burnstein, & Leslie, 2010, 318), he does not provide an extended account of how a detailed mental representation of what is going on in an episode of pretense is constructed. This is an important lacuna that will loom large in Section 7, where our goal is to argue that Leslie's theory fails to provide an explanation for some of the most obvious and important facts about pretense. But for the moment, we will put the problem off to the side. The point we want to stress in this section is that both Leslie's theory and N&S's theory recognize the importance of “quarantining” the mental representations describing what is going on in a pretense episode from the mental representations whose job it is to store what the cognitive agent believes about the real world. And, apart from terminological preferences, the two theories are in complete agreement on how to do this.⁴

¹ One additional bit of evidence that Leslie accepts something like the account of basic cognitive architecture that N&S set out is that F&L offer no objection to this account, though it is the foundation on which the N&S account of pretense is built.

² For more detail, see N&S (2003), Ch. 1.

³ In their insightful elaboration of the N&S model, Weinberg and Meskin (2006) call it the “imagination box”.

⁴ As N&S note repeatedly, this is because this part of their theory was heavily influenced by Leslie's pioneering work.

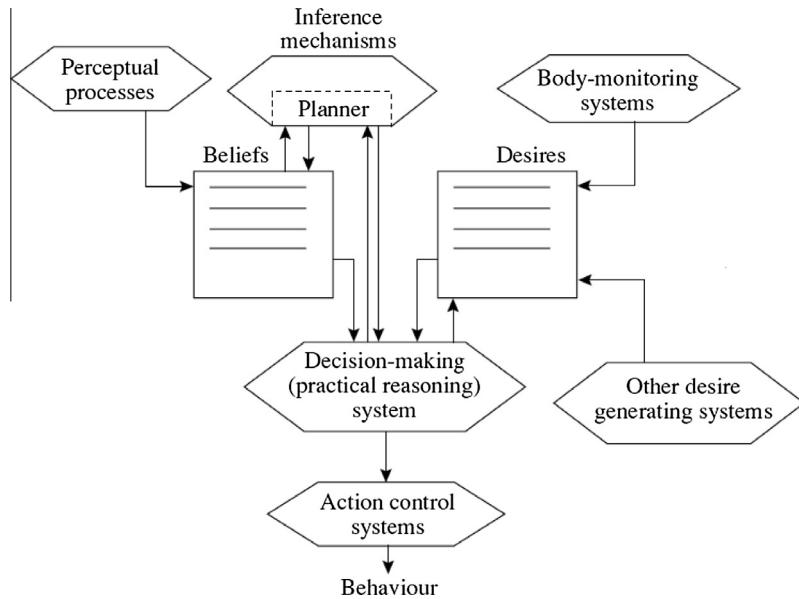


Fig. 1. The basic architecture of the cognitive mind.

4. Some points of disagreement between Leslie's theory of pretense and the N&S theory

By adding decoupled representations to his account, Leslie explains how pretenders avoid what he sometimes calls “reputational abuse” – the sorts of problems that would arise if pretenders treated representations subserving pretense in the same way that they treat the “primary representations” in their Belief Box. In addition to the quotation marks that serve to mark decoupled representations in his model, Leslie proposes to add “a second extension to the primary code” for the mental representations subserving pretense. This second extension is a mental-representation analog of the natural language term ‘pretend’ and serves to indicate that the decoupled sentence that follows it is the content of the mental state of pretending. Here is how Leslie explains the idea.

Language has its mental state terms that denote relationships between agents and opaque propositions. In fact, the verb *pretend* is just such a term. I can add to my model formal elements that play a corresponding role in underlying mental representation. The second extension to primary code will be an item, **PRETEND**, representing an informational relation. This relation will hold between whatever primary representations of agents (e.g. mother) the infant has and decoupled expressions. Pretend metarepresentations might thus have the general form: **Agent–Informational Relation – “expression”**. **Agent** ranges over, for example, persons and self, whereas “**expression**” can be filled by any decoupled representation. (1987, 417)

For example, Leslie suggests that one of the mental representations underlying the tea party pretense might have the form: **I PRETEND “this empty cup contains tea.”** (1987, 420) In all pretense episodes, Leslie maintains, a representation of this sort, which “says in effect, ‘someone is pretending such and such’” is placed in the Belief Box (Nichols et al., 1996, 56). In Leslie's theory, as F&L make clear, PRETEND is a representation of an “innately given mental state concept” and Leslie's account “claims that [children] possess the concept, PRETEND, and use it in generating and interpreting instances of pretending” (F&L, 104, 105).

It is easy to see Leslie's motivation for including decoupled representations in his model, but his motivation for claiming that the concept PRETEND plays a crucial role in the psychological processes underlying pretense is less obvious. Though Leslie offers a number of considerations in support of this idea, the most important of these turns on the fact that “the ability to engage in and recognize pretense emerges in play between 18 and 24 months ... or younger... Young children do not just engage in pretense, but also *recognize* pretense carried out by others, and share in it” (F&L, 105, emphasis added). If children (or adults) could engage in pretense without being able to recognize pretense in others, then engaging in pretense might be viewed as similar to having a belief or, perhaps more plausibly, having – and acting on – a desire. It is entirely possible for an organism to *have* beliefs and desires without having the *concepts* of belief and desire. Indeed, it is generally thought that non-human primates and many other animals that lack the capacity to engage in “mindreading” provide examples of this. When a New Caledonian crow bends a piece of wire and then uses it to extract a favorite food from a narrow pipe (Weir, Chappell, & Kacelnik, 2002), it is plausible to suppose that the crow has a desire to eat the food, and is using a process of practical reasoning like the one depicted in Fig. 1 to figure out how to get it. Sophisticated behaviors of this sort give us good reason to think that the crow *has* beliefs and desires, but they do not give us any reason to think that the crow has the concept of DESIRE or BELIEF, or that the crow believes that it has beliefs and desires, or that the crow believes that other crows have beliefs and desires. However, Leslie maintains that there is an important analogy between merely having and acting on desires, on the one hand, and pretense, on the other (Cf. Leslie, 1994; F&L, 2007, 107–108). For as soon as children are able to engage in solitary pretense, they are also able to engage in joint pretense. And in joint pretense, the child must not only behave in an appropriate way, he must also understand the otherwise bizarre behavior of his pretense partner. Why is Mommy talking to a banana?! In order for the child to understand what is going on, Leslie argues, he must recognize that Mommy is *pretending* that the banana is a telephone. To do this, the child must have a representation (something like) **Mommy PRETENDS ‘this banana is a**

telephone' in his Belief Box.⁵ Since Leslie thinks that pretending is a mental state, he maintains that "pretend play ... [is] a primitive manifestation of the ability to conceptualize mental states" (1987, p. 424) and thus that "pretense is an early manifestation of what has been called *theory of mind*" (1987, p. 416).⁶

Though there are a number of issues on which N&S and Leslie disagree, the main focus of their disagreement is this "second extension" which claims that engaging in shared pretense requires a child to represent that his pretense partner is in the mental state of pretending, and thus that engaging in shared pretense is a manifestation of theory of mind or mindreading. N&S agree that engaging in shared pretense requires recognizing that one's pretense partner is engaged in a peculiar sort of activity and understanding what the partner is doing. But, they maintain, this understanding does not require attributing any mental states to the pretense partner. Rather, when the pretense partner is pretending that *p*, what the child must understand is that his pretense partner is "*behaving in a way that would be appropriate if p were the case*".⁷ They dub this the "behavioral understanding of pretense" which they contrast with the sort of "mentalistic" account defended by Leslie. On the mentalistic account, what one understands is that the partner is behaving in the way she is "*because she is in a particular mental state, viz. pretending that p.*" However, N&S maintain that "a child need not have a *mentalistic* understanding of pretense" in order to engage in shared pretense. "[A] child with a behavioral understanding of pretense could engage in quite elaborate two-person pretense *without understanding that the other person has any mental states at all*. So from the fact that a child engages in group pretense it does not follow that the child is exhibiting 'a primitive manifestation of the ability to conceptualize mental states'." They conclude that "participation in two-person pretense does not support Leslie's claim that the pretender has a mental representations of the form: **Agent PRETEND "expression"**".

N&S's contention that children engaging in shared pretense require only a behavioral understanding of pretense is embedded in a detailed account of the psychological processes that underlie such pretense episodes.⁸ And they offer a number of considerations that, they maintain, make their account more attractive than the account suggested by Leslie. One of these is that Leslie's theory offers no clear account of the *motivation* that children (or adults) have for engaging in pretense. For, according to Leslie, when a child is engaging in (say) the banana-telephone pretense, she has a representation of the form

(1) I PRETEND (of) THIS BANANA (that) "IT IS A TELEPHONE"

and

(2) MOMMY PRETENDS (of) THIS BANANA (that) "IT IS A TELEPHONE"

⁵ This is intended only as a first approximation. MOMMY PRETENDS (of) THIS BANANA (that) "IT IS A TELEPHONE" is closer to the representation that Leslie thinks the child has in his Belief Box. See *Leslie and Frith (1990)* and *F&L (2007)*.

⁶ When this passage was written, verbal false belief tasks were the most widely used test of whether a subject had theory of mind (or "mindreading") abilities, and most typically developing children do not succeed in those tasks until after their third birthday. Since pretense behavior emerges much earlier, it seemed to be a striking "early manifestation of theory of mind". However, with the emergence and rapid development of non-verbal tests for pretense expectations and mindreading abilities during the last decade, it is hard to say with confidence when the ability to recognize pretense or false belief in others first appears (for reviews, see *Apperly & Butterfill, 2009; Baillargeon, Scott, & He, 2010; Carruthers, 2013*). But this poses no problem for Leslie's argument. What is important for that argument is that the ability to recognize pretense in others emerges *no later than* the ability to engage in solitary pretense.

⁷ All quotes in this paragraph are from *N&S (2003)*, p. 53; all italics are in the original.

⁸ *N&S (2003)*, 36–57.

in her Belief Box. But representations in the Belief Box do not motivate behavior; that is the job of desires (*N&S, 2003*, p. 56). Moreover, even if this problem were addressed – perhaps by positing that (1) is also tokened in the child's Desire Box – it offers no insight into how the child knows what to do. In their response to N&S, F&L do not explain how Leslie's theory would address these issues.⁹ Instead, they raise what they take to be a quite conclusive objection to the N&S approach. The behavioral account of pretense, they argue, simply will not work because pretending that *p* cannot be understood as "behaving in a way that would be appropriate if *p* were the case". "The Behavioral theory," they maintain, "fails to characterize very young children's abilities to produce and recognize pretense" (*L&F, 2007*, 103).

5. Friedman & Leslie's critique of behavioral theories of pretense

To explain their objections to N&S's account of pretense, F&L consider a number of examples aimed at showing that the N&S behavioral account of pretense recognition leads to obviously mistaken predictions. In some cases the problem is that the N&S predictions would be far too broad. "The [N&S] theory," they argue, "predicts that children will mistakenly deem non-pretend behaviors to be instances of pretense" (*F&L, 2007*, 111). In other cases, the problem is in the opposite direction – the N&S account is too restrictive and fails to explain how children will recognize many examples of pretense that they do readily recognize. F&L also consider a variety of patches that might be proposed in order to improve the behavioral account. The most important of these focuses on "manner cues" – the smiles, knowing looks, exaggerated movements and special intonation that people engaged in pretense often exhibit, particularly when their pretense partners are children. But, F&L argue, the manner cue patch they propose does not work; rather, it just creates additional problems for the sort of behavioral account of pretense recognition that N&S offer. In the remainder of this section we'll set out some of the cases that F&L consider in defending their claim that N&S's behavioral account is both too broad and too restrictive. We'll also sketch their proposal for invoking manner cues to address the problem that the N&S account is too broad, and their reasons for rejecting that strategy. Our verdict, under all three headings, will be that F&L are right – the behavioral account of pretense recognition that N&S propose leads to predictions that are both too broad in many cases, and too restrictive in many other cases, and the version of the manner cue patch that F&L propose does not work. Though we will not address all of the examples that F&L propose, and we have a quibble or two about some of them, the conclusion we'll draw is that the account of pretense recognition that N&S offer is clearly inadequate. However, in Section 6 we'll elaborate a behavioral account that is very much in the spirit of the one offered by N&S which, we'll argue, does a much better job at handling the sorts of cases that F&L use in their critique of the N&S theory.

The first question that we need to address is how the N&S behavioral account of pretense recognition is to be interpreted. Their formulation, it will be recalled, is that when the pretense partner is pretending that *p*, what the child recognizes and comes to believe is that her pretense partner is "behaving in a way that would be appropriate if *p* were the case" (*N&S, 2003*, 53). But, F&L ask, what exactly does "appropriate" mean here?

In the absence of guidance on this key part of the theory, we have tried to make a reasonable guess about what N&S mean by 'appropriate'. We do not suppose that N&S intend 'polite'

⁹ As noted earlier, they do provide a few very brief hints in *Leslie and Friedman (2007, 121)* and *Friedman et al. (2010, 318)*.

or ‘morally acceptable’. We also rule out, as we must, any *smuggling in* of the concept of pretense: the reader too must guard against silently or secretly interpreting ‘appropriate to P’ as shorthand for ‘appropriate-to-pretending P’. Although this maneuver will avoid the objections we raise here, it would do so by turning N&S’s entire theory into a straightforward notational variant of the metarepresentational theory.

More helpfully, we assume that in this context ‘appropriate’ is restricted to ‘appropriate to P’, so that what the child thinks is, MOTHER BEHAVES IN A WAY THAT WOULD BE APPROPRIATE TO P IF P WERE THE CASE. This restriction is required in order to rule out, as we assume N&S intend, behaving in ways that would be appropriate to Q, if P were the case. Q might, of course, be something quite arbitrary and unconnected with P. Although we assume that ‘appropriate to P’ is what N&S meant, to ease exposition we will stick to their original wording when discussing the Behavioral theory. (F&L, 2007, 113–114)

Now consider the many cases in which a child observes her mother’s behavior when mother’s behavior is guided by the belief that p and p is false (cf. F&L, 111). Until mother discovers that her belief that p is false, she will presumably behave in a way that would be appropriate if p were the case. For example, suppose mother mistakenly believes that a wax candle shaped like an apple actually is an apple. Mother would behave in a way that would be appropriate if the candle really were an apple. She might even try to bite the candle. On the account of pretense recognition offered by N&S, the child would incorrectly consider this to be an instance of pretense. This is one example of what L&F call “the problem of over extension” (F&L, 111) – the problem that the behavioral theory overextends the range of behaviors that a child will recognize as pretense – and cases of false belief are just the tip of the iceberg. F&L go on to argue that on N&S’s behavioral account, a child might construe just about any behavior as an instance of pretense.

For example, suppose that Sally’s mother draws with a piece of charcoal, and that it strikes Sally that Mother is using the charcoal similarly to a crayon. In this case, Sally might well think, MOTHER IS BEHAVING IN A WAY THAT WOULD BE APPROPRIATE IF THE CHARCOAL WERE A CRAYON. That is, Sally will mistake her mother’s behavior for pretense. This example might not be so problematic if it were unique or even rare. However, countless other examples of non-pretense behaviors will in like fashion nicely fit the behavioral description. All that is required is that the child should be able to identify a similarity between one thing and another. (F&L, 2007, 111)

Actually, though F&L do not develop the point, the over extension problem is even *more* severe than this passage suggests, since most people, most of the time have true beliefs, and when they believe that p they typically act in a way that would be appropriate if p were the case. So, on the N&S behavioral account, a child might construe just about any behavior guided by a true belief as a case of pretense.

One move that might seem tempting at this point would be for the advocates of the behavioral account to invoke manner cues – the knowing looks, smiles and exaggerated movements that have been shown to be important cues for children’s recognition of pretense (Lillard & Witherington, 2004; Richert & Lillard, 2004). But F&L argue that, for two rather different reasons, the appeal to manner cues is of no help to advocates of the behavioral theory. The first reason is that the behavioral theory “provides no room for the ‘manner’ cues” since the theory maintains that children determine whether someone is pretending that p by determining whether the person’s behavior would be appropriate if p were true, and “this behavioral description makes absolutely no mention of

‘manner’ cues” (F&L, 2007, 112). The second reason is that the presence of manner cues actually decreases the similarity between pretense behavior and the sorts of behavior that the behavioral theory claims that the child is using to identify pretense. If mother pretends that a stone is a crayon, and uses exaggerated drawing motions with the stone without ever making contact with the paper, the manner cues decrease the extent to which the behavior would be appropriate if the stone were a crayon. Here again, we think F&L are correct. On the account of pretense recognition offered by N&S, manner cues simply make things more difficult. However, on the revised behavioral account of pretense recognition that we’ll set out in the following section, manner cues play a much more helpful role.

In addition to the problem of over extension, F&L note that there are also many cases that children do recognize as pretense which are not readily accounted for by the version of the behavioral theory offered by N&S. The simplest examples involve “object substitution”.

Suppose Sally engages in object substitution pretense by pretending that a pencil is a car: she may push the pencil along a table top to pretend that the pencil/car is driving along. She may also make engine noises, such as “vroom, vroom”, to pretend that the pencil as car is making these noises. According to the behavioral theory, Sally is behaving in a way that would be appropriate if the pencil really were a car. But is she? No. If the pencil were a car then Sally would hardly push it across a table or make engine noises! Handling, pushing, and making “vroom” noises are not appropriate behaviors when dealing with a *real* car. Instead, appropriate behaviors for dealing with a real car include opening its doors, getting inside or, if one is very young, being placed inside, sitting still, and looking out the window. (F&L, 2007, 115)

F&L go on to consider a number of ways in which behavioral theories might be modified in an attempt to sidestep the problems. But, they argue, none of these strategies succeed. We will not offer a detailed survey of these patches and F&L’s objections to them because, while we have a quibble here and there, we think that on the important points, F&L are correct. The behavioral account of pretense recognition proposed by N&S is both too broad in many cases and too narrow in others. Moreover, F&L are also right to claim that the sorts of modifications of the behavioral theory that they propose do little or nothing to alleviate the problem. We are, however, not prepared to conclude that behavioral accounts of pretense are doomed. Quite the opposite! In the next section, we will develop a behavioral account in the spirit of the one proposed by N&S which, we think, does a much better job at handling the sorts of cases that F&L use in their critique of N&S’s version of the behavioral theory.

6. The pretense game

According to Leslie and his collaborators, pretense is a mental state. We disagree. We think that pretense is best viewed as a sort of *game* – a game that requires no understanding of mental state concepts.¹⁰ But before trying to describe the pretense game, we’ll tell you about another game that we’ll call the *imitation game*.

¹⁰ The idea that pretense is best viewed as a game is proposed in an important paper by Langland-Hassan (2012). Though our account is rather different from the one defended by Langland-Hassan, we are indebted to him for a number of important insights. The primary focus of Langland-Hassan’s paper is his “Single Attitude” account of pretense, which poses a challenge to Leslie’s account of pretense and to the account we defend here. We think the Single Attitude theory will have a hard time accounting for a number of phenomena, including the mindreading and pretense deficits in individuals with autism. But that is a debate for another occasion.

The imitation game is played in a room with a big TV. The TV displays video clips on which various events are portrayed. In one clip, a mother is talking on the telephone; she hands the phone to a child who holds it in the usual way and says "Hello, Daddy, how are you?" In another clip, an adult and a child are having a tea party; after pouring tea into two cups, the adult pours the tea out of one cup and then asks the child to point to the full cup and the empty one. The child complies. In a third clip, a small and noisy sports car zooms across a flat surface. There are lots of other video clips that can be displayed on the TV; each one is labeled with a sentence or two describing what happens in the clip. To start the game, a player picks a video clip, which then begins to play. The basic rule of the game requires a player to *imitate* what is going on in the video clip by using the objects available in the room, including his own body, to create a situation that is, in salient respects, similar to what is happening on the video. If, for example, there is a cartoon character in the video running around in a circle, a child (or an adult) could play the imitation game successfully by running around in a circle. If the cartoon character runs around in a circle in one direction, then reverses direction, a successful player could do the same. But the standards for what counts as success are very flexible; there is no need for the players to imitate what is going on in the video *exactly*. Far from it. If the video clip depicts Fred Astaire with a top hat and a walking stick doing an elegant tap dance to the music of *Puttin' On The Ritz* played by a Hollywood orchestra, a player in the imitation game could do a rather awkward shuffle with a paper hat and a broom handle, while humming the music. All that is required is that what the player is doing strikes him and others as *saliently similar* to what is happening on the screen. So obviously there are *lots* of ways to imitate what is happening in the video. If the video shows a fire engine rushing down the street with its siren blaring, a player in the imitation game might rush across the room making sounds somewhat similar to those of the siren. But if there happens to be a toy fire truck in the room, the player might push the truck across the room, making fire siren noises. And if the toy fire truck happens to be one of those, loved by children and loathed by parents, that, at the push of a button, makes its own fire siren noises, the player can just turn on the siren and push the truck across the room without making any noise herself. There are limits to what counts as an acceptable imitation, though the boundaries are very vague indeed. If the video shows Fred Astaire's *Puttin' on the Ritz* tap dance, or a fire truck streaking down the street, sitting at a table and eating a hamburger would not count as imitating the video because it does not strike us as similar, in salient respects, to what is going on in these videos. Pushing a pillow across the room while making fire siren noises will count as a passable imitation of the fire truck video, if there is nothing better around to push. But if there is a toy fire truck available, pushing a pillow and making siren noises will be at best marginal, and pushing a pillow while making no noise at all is more marginal still.

Now suppose that another person observes someone playing the imitation game. What would the observer make of these strange goings on? Well, if the player is doing a good job of imitating what is happening in the video by using his own body and the available objects to create situations that are saliently similar to what is happening in the video, then it will usually be obvious to an observer that this is what the player is doing. So, if the video displays a cartoon character running around in a circle in one direction and then reversing direction, and if the player does the same, it will be obvious that the player is imitating the behavior of the cartoon character in the video. Much the same is true when the video displays a fire engine and the player rushes across the room making siren noises, or

pushes a toy fire truck across the room making fire engine noises. In both of these cases, it will typically be obvious that the player is creating a situation similar, in salient respects, to what is happening on the video. However, if the player pushes a pillow across the room making no sound at all, an observer might well fail to notice any salient similarity between the video and the player's activities. For our purposes, it is important to note that in all the cases where the observer recognizes that the player is imitating what is going on in the video, the observer need not attribute any mental states to the player. What the observer recognizes is that the player's behavior is creating a situation that is, in salient respects, similar to what is happening on the video, and doing this does not require that the observer attribute mental states to the player.

Thus far we have portrayed the imitation game as a game played by only one person. But actually it is a game that two or more people can play. If the video shows a mother talking on the telephone and then handing the phone off to a child who says, "Hello Daddy, how are you?" and if there happens to be a toy telephone in the room, a mother and child (or two children) could play the game with a toy telephone, with one behaving in a way that is saliently similar to the way the mother in the video behaves, and the other behaving in the way that is saliently similar to the way the child behaves. And if there is no toy telephone available, the two players could use a banana instead. The situation they create would not, of course, be exactly like the situation displayed on the video. But it does not have to be. When the player who takes the mom's role holds the banana up to her face and repeats the words that the Mommy on the video used (or something similar), it will be obvious to the other player that the first player is imitating the behavior of the Mommy on the video. And when the banana is handed to the second player, it will be obvious that she can join in the game by imitating salient aspects of the behavior of the child in the video. Moreover, here again all of this can happen without either player attributing mental states to the other.

What does all of this have to do with pretense? Well, obviously there is no big TV being utilized in pretense. But, on the N&S account, there is a Possible World Box which, like a television video clip, contains a representation of an unfolding sequence of events. In the imitation game a player creates a sequence of events that is saliently similar to the events depicted on the video. In the game of pretense, a player creates a sequence of events that is saliently similar to the events represented in the PWB.¹¹ In the imitation game, a player gets to choose which video to play. Much the same is true in the pretense game, except that the choice is made by the pretender deciding on some noteworthy feature of the events that will be imitated – *Alan and I are having a tea party*, perhaps, or *Mommy and I are talking to Daddy on the telephone*, or *there is a dead cat in the room* – and a representation of that feature is added to the PWB as what N&S call a "pretense premise." The PWB then generates a much more detailed description of the state of affairs in which the pretense premise is true, and the player imitates what is going on in the PWB by creating a situation that is, in salient respects, similar to

¹¹ In the imitation game, the player need not be aware that the events she is observing are on a video screen; she may not even have the concept of a video screen. Rather, the player has what might be thought of as a *demonstrative* belief and a *demonstrative* desire. She believes that events of a certain sort are occurring on *that thing* (the video screen), and she desires to create a saliently similar sequence of events. Similarly, in the pretense game, the player is aware of the representation of events of a certain sort in a component of her mind that she has access to. She need not be aware that that component of the mind is her Possible World Box, or that the events represented are being imagined. She need not even have the concept of imagination. Rather, she has the demonstrative belief that events of a certain sort are occurring *there* (in her PWB) and she desires to create a saliently similar sequence of events.

the situation represented in the PWB.¹² So our account of how behavior is produced in the pretense game is quite similar to our account of how it is produced in the imitation game.

But what about pretense *recognition*? How does an observer come to understand what someone engaged in the pretense game is doing? More specifically, how do young children understand what is going on? This is the problem that lies at the heart of F&L's critique of N&S's behavioral account. "[T]he behavioral theory," they maintain, "struggles to account for children's ability to recognize pretense." (F&L, 2007, 119) On our view, however, there is not much struggle required. As in the imitation game, observers can understand what someone playing the pretense game is doing by noting that the person playing the game is creating a state of affairs that is similar, in salient ways, to what is going on in an appropriate depiction of an imaginary world. In the imitation game, the depiction is on the video clip, and visible to both the player and the observer. In the pretense game, by contrast, the appropriate description is in the player's PWB, to which the observer has no access. So the observer must first construct an appropriate imaginary world description in her own PWB by providing it with an appropriate pretense premise. How does she discover which pretense premise to use?

When the observer is an adult or an older child, there will often be an explicit verbal suggestion. For example, N&S reproduce a dialogue between two four-year olds, Val and Abe, from the CHILDES (Children's Language Data Exchange System) database (MacWhinney and Snow, 1990), which begins with Val saying "Pretend we're on a bus ok?" With that by way of input, Abe's PWB can construct a world description similar enough to the one that Val is using, and then note the similarity between what is happening in the imaginary world depicted in the PWB and what Val is doing as he gets on a toy car.¹³ A bit later, Val proposes that they "pretend there is a monster coming, ok?" But Abe refuses: "No let's don't pretend that Cause it's too scary that's why." In another example, reported in Gould (1972, 212) and recounted by N&S, a three-year old announces "I'm a pussycat. Meow meow." He then lies on the ground, saying "I'm dead. I'm a dead pussycat."

This cannot be the whole story, however, since as Leslie and colleagues stress, joint pretense requires an understanding of what one's partner is doing, and joint pretense begins at about

18 months, long before children are capable of understanding dialogue like this. Even among older children and adults, it is probably the case that only a minority of pretense episodes begin with one party announcing his pretense premise. When no pretense premise is announced, we propose that manner cues play an important role in alerting the observer that the pretense game is being played. The smiles, knowing looks, winks and nods, exaggerated gestures, unusual tone of voice and stopping short of normal goals that have loomed large in the pretense literature since Piaget, are *signals* to children (and to adults as well) that the pretense game is being played.¹⁴ Once the signal is received, the child's cognitive system begins providing the PWB with pretense premises and noting similarities between features of the world described in the PWB and salient features of the behavior of the person (e.g. a parent) who has initiated the pretense. As Langland-Hassan notes, in addition to signaling that one's companion is playing the pretense game, manner cues can also focus attention on relevant aspects of the pretender's behavior (Langland-Hassan, 2012, 174). Thus, for example, if Daddy says, loudly and in an unusual tone of voice, "Oh, I am so sleepy!" and accompanies this with an exaggerated yawn, the tone of voice and the exaggerated yawn are cues that Daddy is playing the pretense game; his odd, loud intonation calls attention to the words that suggest an obvious candidate for a pretense premise to try in the PWB – viz. *Daddy is very sleepy* – and the exaggerated yawn is a very salient aspect of behavior that is similar to what Daddy does in the imaginary world that this pretense premise generates in the PWB. Of course, Daddy's yawning behavior, and his subsequent rubbing his eyes in an exaggerated and stylized way, are not exactly what Daddy would do if he were really very sleepy. But they do not have to be. They need only be similar and salient. And while the exaggeration reduces the similarity, it enhances the salience. Once the child has hit upon a pretense premise that enables her to understand what Daddy is doing (he is behaving in a way that is similar, in salient ways, to what he is represented as doing in the imaginary world of the PWB) she can, if she wishes, join in the pretense game by giving Daddy a good night hug and kiss, or, if she is big enough, fetching him a blanket and a pillow. Note that at no point in this account does the child need to attribute a mental state like Leslie's PRETEND to Daddy. Indeed, the game can unfold even if the child attributes no mental states at all to Daddy.¹⁵

It will be recalled that F&L raise a number of objections against the behavioral account of pretense proposed by N&S. The current account of pretense, while obviously in the spirit of the N&S account, departs from it in some important respects. And these changes, we submit, enable the account to avoid F&L's objections. Their first cluster of objections turned on the fact that the N&S account of pretense recognition was vastly over inclusive – it entailed that children should take most behavior based on the false belief that p, and indeed most behavior based on the true belief that p, to be instances of pretense, since in these cases the other person is behaving in a way that would be appropriate if p were the case. But N&S completely ignored the role of manner cues in pretense, and once these are invoked, as they are in the account we have been sketching, the over-inclusiveness problem disappears. If a young child relies on manner cues to detect that another person is playing the pretense game, the child will not include normal behavior derived from false belief, or from true belief, to be

¹² While there are some important differences, this account of pretense behavior is clearly in the spirit of the account offered by N&S (2003, p. 37):

Why does a person who is engaging in pretense do the sometimes very peculiar things that pretenders do? Why, for example, does a child or an adult who is pretending to be a train walk around making jerky movements, saying 'Chugga chugga, choo choo'? The answer we would propose comes in two parts, the first of which is really quite simple. Pretenders behave the way they do because they want to behave in a way that is similar to the way some character or object behaves in the possible world whose description is contained in the Possible World Box. To pretend that p is (at least to a rough first approximation) to behave in a way that is similar to the way one would (or might) behave if p were the case (see Lillard, 1994: 213 for a similar treatment). Thus a person who wants to pretend that p wants to behave more or less as he would if p were the case. In order to fulfill this desire, of course, the pretender must know (or at least have some beliefs about) how he would behave if p were the case. And the obvious source of this information is the possible world description unfolding in the PWB.

One difference to note is that while N&S claim that the pretender aims to behave in a way that is similar to the way some character or object is depicted as behaving in the PWB, our revised account claims that the pretender aims to create a sequence of events that is saliently similar to the sequence of events represented in the PWB.

¹³ Though the details are not crucial for our argument, we would like to endorse the amendments offered by Weinberg and Meskin (2006) to N&S's account of the way in which the PWB's description of an imaginary world is constructed. Of particular importance is their distinction between "punctate" and "streaming" input to the PWB (which they call the "imagination box"). Streaming input helps to explain how the contents of an imaginary scenario in an observer's PWB can track and adapt to elements that a pretender introduces into the pretense game as it unfolds.

¹⁴ As noted earlier, Lillard and colleagues have shown that manner cues are indeed important cues for children's recognition of pretense (Lillard & Witherington, 2004; Richert & Lillard, 2004).

¹⁵ To be clear, we do not claim that children (or adults) who recognize pretense or engage in joint pretense never attribute mental states to their pretense partners. Rather, our claim is the much more modest one that, in many cases, there is no need for them to do so. And even when they do attribute mental states to their pretense partners, there is no need for them to attribute a mental state like Leslie's PRETEND.

pretense behavior, since the manner cues are absent. F&L consider a move like this, as an amendment to N&S's account, but reject it because manner cues make behavior less similar to the behavior that would be appropriate if p were the case. And while that is true, it is not a problem for the current account of pretense recognition, since the child is not looking for behavior that would be appropriate if p were the case. Rather, she is looking for behavior creating a sequence of events that is saliently similar to the events represented in the PWB, when p is used as a pretense premise. And, as we have noted, the similarity can be *far* from perfect, and the manner cues, while typically diminishing similarity, will also often heighten salience. We conclude that the over-extension problem is easily handled on the current account.

F&L also make the case that the N&S account is too narrow, because it cannot handle cases of "object substitution" and sound effects, as when young Sally pretends that a pencil is a car and makes "vroom vroom" sounds while the pencil is moving along. This is not, F&L note, the behavior that would be appropriate if the pencil were a car, since we do not push cars around or make "vroom" noises in their presence. But if Sally's pretense premise is that there is a noisy car going by, events in the imaginary world represented in her PWB will be similar to salient aspects of the state of affairs that Sally is bringing about by pushing the pencil and saying "vroom". And if another child, Toby, uses a similar pretense premise in his PWB, he will note the same salient similarities, and understand what Sally is doing. She is behaving in a way that creates events saliently similar to those in the imaginary world. So the "too-narrow" problem is also easily handled.

7. A critique of Friedman and Leslie's explanation of pretense

If the explanation of pretense that we have offered in the previous section is plausible, then it might be thought that for the moment the debate has reached a standoff, since competing and significantly different explanations have been proposed – our "pretense game" account and the metarepresentational account offered by Leslie and colleagues – both of which claim to be able to account for the facts about pretense. However, we think that this is the wrong conclusion to draw. The debate is far from a standoff since the explanation offered by Leslie and colleagues is in important ways under-developed. That is the claim that we'll defend in this section. We'll focus on the account offered in [Friedman and Leslie \(2007\)](#), citing other papers where appropriate.

To begin, let's assemble some of the facts about pretense production and recognition that need to be explained. As F&L remind us, children have the capacity to engage in both solitary pretense and shared pretense quite early in development. In order to engage in shared pretense, children (and adults) need to be able to produce appropriate pretense behavior; they also must be able to recognize and understand appropriate pretense behavior produced by their pretense partner. Let's consider an example. Suppose Mommy is playing with 2 year old Sally and decides it would be fun to pretend that the banana in the nearby bowl of fruit is a telephone. There is, of course, an open-ended range of behaviors that Mommy *could* engage in. Here are a few:

- (i) She could pick up the banana, hold one end near her ear and the other near her mouth, and say "Hello, Daddy, how are you? Would you like to talk to Sally?" and then hand the banana to Sally.
- (ii) She could pick up the banana, point one end at Sally and say "Bang! Bang!"
- (iii) She could pick up the banana, tuck it under her sweater, and say, "All gone!"

- (iv) She could pick up the banana, and move it across the table, saying "zoom, zoom," stopping the banana near Sally, saying "Do you want to drive?" and offering the banana to Sally.

In each case, we can imagine that Mommy accompanies her behavior with a range of "manner cues" – a big smile, a knowing look, exaggerated movements, an exaggerated tone of voice, etc. Obviously, only (i) would be appropriate behavior if what Mommy wants to do is pretend that the banana is a telephone. So one fact that needs explaining is how Mommy knows this. More generally, we need an explanation of how pretenders know what to do when pretending. Since Mommy is initiating the pretense, Sally's initial challenge is to understand what Mommy is doing, and how Sally does this also requires an explanation. Once she has understood what Mommy is up to, she must react with appropriate behavior, unless, of course, she decides that she does not want to play the game that Mommy is playing. To be more specific, we need to explain why, when Mommy does (i), Sally comes to understand that Mommy is pretending that the banana is a telephone, and then takes the banana, holds it up to her face and says, "Hi, Daddy, I love you." But this is *not* what Sally understands and does if Mommy initiates the episode by doing (ii), (iii) or (iv).

In the previous section we sketched the sort of explanation that our pretense game theory offered for these facts. What is the explanation offered by the metarepresentational theory defended by F&L? A crucial component of the answer is announced at the beginning of the Abstract of the [F&L \(2007\)](#) paper.¹⁶

- (1) A major challenge for theories of pretense is explaining how children are able to engage in pretense, and how they are able to recognize pretense in others. According to ... the metarepresentational theory, children possess both production and recognition abilities *because they possess the mental state concept, PRETEND.* (103, emphasis added)

This idea is repeated and elaborated frequently in the F&L paper. Here is a selection of comments that F&L make about the PRETEND concept and the production and recognition of pretense.

- (2) The metarepresentational theory claims that children's twin abilities to engage in solitary pretense and to recognize pretense in others both *depend on* the same innately given mental state concept, PRETEND. (104, emphasis added)
- (3) [T]he [metarepresentational] account claims that [children] possess the concept, PRETEND, and *use it in generating and interpreting instances of pretense.* (105, emphasis added)
- (4) According to ToMM theory [=Leslie's Theory of Mind Mechanism theory], both the abilities to engage in pretense and to recognize pretense *are the outcome of the child's possession of the concept PRETEND.* Possession of this single concept is the *basis* of both abilities." (107, emphasis added)
- (5) For the PRETEND metarepresentational theory ... pretending is not merely behavior but an underlying attitude (mental state) *from which endlessly varied behaviors may flow.* (116, emphasis added)
- (6) According to ToMM theory, *engaging in and recognizing pretense is possible because very young children possess and employ the mentalistic concept PRETEND.* (120, emphasis added)
- (7) [P]retend play issues from and thereby inherits the properties of PRETEND-metarepresentations. (120, emphasis added)

¹⁶ In this section, we will number quotes from F&L for easy reference.

- (8) [T]he child can both pretend and recognize pretense in other people and does so early and productively. We argue that both abilities *spring from* the concept of pretending. (120, emphasis added)
- (9) According to the ToMM theory, the young child possess the concept PRETEND by virtue of possessing the requisite neurocognitive mechanisms that deploy the necessary symbolic structures. These mechanisms allow other systems to plan and understand actions under the description, I PRETEND P, and *empower* the child to recognize that someone else is pretending P. (120, emphasis added)

Clearly, on Leslie's theory, the PRETEND concept has a lot of explanatory work to do; it plays a role in "generating and interpreting" pretense behavior; pretend play "issues from" PRETEND representations; both pretending and recognizing pretense "spring from" the concept; the concept "empowers" the child to recognize that someone else is pretending that P. How does the PRETEND concept manage to accomplish all of this? To answer that question, we have to look more closely at what F&L tell us about the PRETEND concept. They make three important claims about PRETEND that might be exploited in such an explanation:

- (Claim 1) that it is a mental state (or "mentalistic") concept.
- (Claim 2) that it is subserved by special neurocognitive mechanisms.
- (Claim 3) that it is innate.

We will address each of these in turn.

Early on in their paper, F&L tell us that PRETEND is a mental state concept, because "pretending happens to be a mental state and not a mere form of behavior" (104–5). A few pages later they repeat the point: "Early PRETEND is a mentalistic concept, in part because *pretending happens to be a mental state*." (109) However, they are careful to explain that we should not read too much into this claim. After the first quote above they add:

- (10) However, the metarepresentational account does not entail that children have the concept, MENTAL STATE. Nor does it entail that they consciously reflect upon the mentalistic nature of pretense or pretenders. (105)

And in a footnote to the second quote they explain:

- (11) This is not the same as saying that a metarepresentation represents a mental state as *being a mental state* (or as *being a representation* or as *being a mental representation*).... Instead, a metarepresentation simply represents pretending as *pretending*. (109)

Later, they offer further clarification:

- (12) To be clear, we do *not* believe that children's possession of this concept [PRETEND] implies that they know much *about* this or other mental states. In particular, it does not imply that they theorize about mental representation or that they theorize that pretense is an 'internal, subjective, mentally depictive state', as some have supposed... Nor does it require that children can report that pretenders 'are thinking' and what they are 'thinking about' while pretending.... What it does mean is that they are able, within performance limits..., to engage in, recognize, share with others, and reason about, simple pretend episodes. These episodes exhibit the semantics of mental state reports. (120)

So when F&L say that PRETEND is a mental state concept, their claim is analogous to the claim that a child's COW concept is a "vertebrate concept" because cows happen to be vertebrates, with no implication that a child who possesses this concept knows anything about vertebrae or spines or chordate body plans. As

Friedman (2013) makes clear, the reason why he and Leslie insist that a child who has the PRETEND concept need know very little about pretending is that without this claim they would have trouble dealing with Lillard's (1993) influential "Moe the Troll" experiments. In one of these experiments, children watch Moe the Troll who is described as jumping up and down like a kangaroo. The children are told that Moe does not know what a kangaroo is. But when asked whether Moe is pretending to be a kangaroo, four and five year olds say that he is. Obviously, if having the PRETEND concept required knowing that one cannot pretend to be an X unless one knows what an X is, then we could not attribute the PRETEND concept to these children. And since the metarepresentational account maintains that children as young as two have and use the PRETEND concept, that account would be in trouble.¹⁷ For our purposes, what is important here is that in characterizing the PRETEND concept F&L repeatedly stress what is *not* built into or entailed by the concept.

But, as we saw earlier, they insist that pretense is a mental state, and thus that PRETEND is a mental state concept. We disagree. We do not think that the child's PRETEND concept is a mental state concept, because, in contrast with F&L, we do not think that pretending is a mental state. On our view, pretending is an activity that is usefully viewed as a kind of game. Why do F&L maintain that "pretending happens to be a mental state"? As far as we can see, they suggest only one argument. It turns on the analogy between the semantic structure of sentences attributing pretense and the semantic structure of sentences attributing uncontroversial mental states like believing and desiring. The idea was briefly suggested at the end of (12), and emerges more clearly in (13).

- (13) It seems that the child cannot be a behaviorist about pretense and also get it right about sound effects in pretense. The trouble is again that pretend play itself manifests the peculiar semantics of mental state reports, as Leslie (1987) pointed out. Behavioral descriptions simply do not and cannot exhibit or follow the same logic. They are thus doomed to fail. (118, emphasis added)

In a more recent paper, Friedman (2013) is a bit more explicit about the argument.

But how do we know whether *pretend* is a mental state? As noted, we might expect *pretend* is a mental state because it relates an agent (e.g., Max) to a propositional content (e.g., the cup contains juice), as do propositional attitude mental states like *believe* and *intend*. However, this does not show that *pretend* must be a mental state because *say*, *sing*, and *write* also relate agents and propositional contents even though they are not mental states. For example, Max can *say* that the cup contains juice, even though *say* is not a mental state. Hence, *pretend* might not be a mental state.

Moreover, there is a compelling reason to believe that *pretend* is not a mental state. Considered individually, mental states like *believe*, *desire*, and *intend* do not require behavior. But pretend play does require behavior. Max can believe a cup contains juice even if he does not drink the juice, and he can want or intend to drink the juice even if he never gets around to doing so. But it would be odd to assert that Max pretends the cup contains juice if he is quietly reading a book with no cup or juice in sight. At best he could be described as imagining that juice is in the cup, or as thinking about this. For actual pretense, Max has to behave in a way that conveys what he pretends. This

¹⁷ This strategy for dealing with Lillard's findings was first elaborated in German and Leslie (2001).

requirement for behavior marks an important difference between pretending and mental states like imagining, believing, desiring, and even intending.

Though much of this discussion suffers from an unfortunate failure to keep track of the distinction between use and mention, we think the general thrust is clear enough. The main argument for the claim that pretending is a mental state turns on the analogy between sentences attributing pretense and sentences attributing mental states like believing, desiring and intending. But since, as Friedman acknowledges in the passage just quoted, the analogy also holds between sentences attributing pretense and sentences attributing saying, singing and writing, the argument fails.¹⁸

Our goal, recall, is to understand F&L's claim that the PRETEND concept plays a central role in generating and interpreting pretense behavior by looking more closely at what F&L tell us about that concept. But so far we have made very little progress. Clearly, the fact that possession of the PRETEND concept does not imply that children know much about pretending or about other mental states is not going to be of much help with that project. Nor does their claim that PRETEND is a mental state concept – a claim which, as we have just seen, is supported only by an implausible argument. Nonetheless, as we saw in quote (12), F&L maintain that possession of the PRETEND concept means that children are able to engage in simple episodes of pretense, to recognize them and to share them with others. Our question is *how*? How does possession of the PRETEND concept enable children to do these remarkable things? How, for example, does possessing the PRETEND concept enable Sally to understand what Mommy is doing when she holds the banana up to her face and says "Hello, Daddy"? And how does it enable Sally to know what to do when Mommy hands her the banana? These questions become even more puzzling when F&L tell us that possessing the PRETEND concept does not imply that children know much about pretending.

The second claim F&L make is that PRETEND is subserved by special neurocognitive mechanisms. One place they make this claim is in quote (9) above. The "neurocognitive mechanisms that deploy the necessary symbolic structures . . . allow other systems to plan and understand actions under the description, I PRETEND P, and empower the child to recognize that someone else is pretending P." But this passage raises more questions than it answers. What "other systems" are doing the planning and understanding? How do the neurocognitive mechanisms that "deploy" PRETEND "allow" these other systems to plan and understand pretense behavior? How do the neurocognitive mechanisms "empower" the child to recognize that someone else is pretending that P (and is not pretending that Q or R or S)? On these questions, F&L offer almost no guidance at all. F&L do tell us that "for Sally to pretend that the banana is a telephone simply requires representing the agent of pretend as self . . . or as we if pretense is shared, and using the resulting metarepresentation, I (WE) PRETEND THIS BANANA 'IT IS A TELEPHONE' in part as a high-level command to the action planning system." (108) But they do not go on to tell us how the action planning system manages to figure out that the right thing to do is to hold the banana up to one's ear and mouth and talk into it, rather than pushing it around the table saying "zoom, zoom" or pointing it at one's partner and saying "bang, bang." Clearly, a lot of information is required for the action planning system to generate an appropriate action from the endless variety of options available. Is the information that enables the

system to do that contained in the PRETEND concept? If not, where does it come from? F&L do not tell us. Nor do they give us even a hint about what the information is like or how it succeeds in locating an appropriate behavior. All of this is in stark contrast to the pretense game theory set out in the previous section, which provides a straightforward account of how a pretender's cognitive system figures out what to do when the agent wants to pretend that a banana is a telephone.

In quote (2), F&L make the third claim about the PRETEND concept: it is innate. But while this may explain how children come to possess the concept, it tells us nothing at all about how the concept enables children (and adults) to engage in pretense or to recognize what others are doing when they are engaging in pretense. We conclude that Claims 1–3 are of no help in explaining how possession of the PRETEND concept plays a role in generating and interpreting pretense behavior.

8. Objections, replies and clarifications

In the previous section we argued that, in its current state, Leslie's metarepresentational theory of pretense is not a strong competitor for our pretense game theory because Leslie's theory is gravely underspecified. Leslie and his colleagues have not told us how the theory explains some of the most obvious facts about pretense. They have not told us how possession of the PRETEND concept enables a child to understand what Mommy is doing in the banana-telephone pretense, or how it enables a child (or an adult) who wants to participate in that pretense to know what to do. In this section we will consider some objections to that argument that we have encountered.

The first objection is that one component of the argument we set out in the previous section is rather uncharitable to Leslie and colleagues. It is, this objection maintains, pretty obvious that Claims 1–3 cannot do the sort of explanatory work that is needed. So it seems unfair to suggest that when F&L make these claims they are meant to explain how the possession of the PRETEND concept enables children (and adults) to recognize and engage in pretense. Our response is to concede that perhaps it is uncharitable to assume that Claims 1–3 were intended to do any substantive work in explaining how children "use [the PRETEND concept] in generating and interpreting behavior." (Quote 3) However, we are inclined to think that alternative interpretations of F&L's intentions are also uncharitable. As quotes (1) thru (9) make clear, F&L repeatedly insist that possession of the PRETEND concept plays a central role in the production and recognition of pretense behavior. But nowhere in their article, or in Leslie's other work, could we find any substantive account of how possession of the PRETEND concept enables a child to recognize what Mommy is doing when she holds a banana to her ear and says "Hello Daddy," or how it enables the child to know what to do when Mommy hands her the banana. The disconnect between the repeated assertion that the PRETEND concept does crucial explanatory work and the absence of any substantive account of how it does that work might be interpreted as indicating that F&L are adopting what could be labeled "concept magic" – the view that merely positing that people possess a concept is enough to explain a complex array of capacities and behaviors. Our suggestion that Claims 1–3 were meant to fill the striking explanatory gap in the exposition of the metarepresentational theory was motivated by the thought that this would be more charitable than suggesting that F&L were partisans of concept magic. A third alternative is that, though the metarepresentational theory was first proposed more than a quarter of a century ago, and the absence of an explanation of how possessing the PRETEND concept enables a child to engage in and recognize pretense is a striking shortcoming of the theory, Leslie and colleagues simply have not

¹⁸ For an extended critique of Leslie's original argument for the claim that "pretend play itself manifests the peculiar semantics of mental state reports" see N&S (2003), 54–55.

yet gotten around to addressing this problem in a systematic way.¹⁹ That too strikes us as less than charitable. The bottom line, here, is that each of options for dealing with the conspicuous explanatory gap in the metarepresentational theory seems uncharitable, until we consider the alternatives.

This third option for explaining the existence of the explanatory gap in the metarepresentational theory provides the backdrop for another objection that we have encountered. This second objection insists that, to be convincing, our critique cannot simply point out that Leslie has yet to provide important details about how his theory explains the facts. Rather, what we must do is show that the metarepresentational theory *cannot* be elaborated in a way that would fill the explanatory gap. This objection, we believe, misunderstands both our conclusion and the dialectical structure of the debate in which it is embedded. When we claimed, at the beginning of Section 7, that our pretense game theory offers a better explanation of pretense than Leslie's metarepresentational theory, we meant to be comparing the current version of our theory with the current version of Leslie's theory. Our complaint has been that the current version of Leslie's theory is seriously under-specified. It claims that possession of the PRETEND concept plays a crucial role in recognizing and engaging in pretense, but it tells us almost nothing about *how* the concept does this. We do not claim – indeed we think it would be absurdly arrogant to claim – that partisans of the metarepresentational account could not possibly elaborate and modify their theory to address the challenges we have posed. They might, for example, adopt ideas from our pretense game account. Or they might develop their theory in some way that neither we nor they have yet anticipated. This, we believe, is how science should (and often does) work. In their paper, F&L elaborated a number of problems for the N&S "behavioral" account of pretense, and made it clear that without major modifications that theory was untenable. But it was not their job to propose a better version of the behavioral theory or to argue that it would be impossible to provide one. In this paper, we have proposed a substantial overhaul of N&S's theory – though our theory is still very clearly "behavioral" since it maintains that pretending is an activity (usefully viewed as a kind of game) and our theory does not require that any mental state concepts or mindreading capacities are used in recognizing or engaging in pretense. It is our hope that as the debate moves forward, advocates of the metarepresentational theory will propose a better version of their theory and point out problems in ours. This dialectical process ends not with a knock-down argument that one of the theories faces problems that cannot possibly be addressed, but when one side or the other concludes that the other side's approach is more promising.

Before ending this section, we should say a bit more about "concept magic." We introduced the term as a label for the view that merely positing the possession of a concept constitutes an explanation for a complex array of capacities and behaviors. We do not think that any serious cognitive scientist would explicitly endorse concept magic. However, in his important book, *Mindreaders* (2011), Ian Apperly makes a persuasive case that substantial parts of the theory of mind literature come perilously close to concept magic. Debates focus on whether or not some group of subjects (often subjects who are young or impaired) *have* the BELIEF concept, or some other mindreading concept. But, Apperly argues, merely hypothesizing that people have mindreading concepts "tells us very little about how adults actually read minds." Rather, Apperly urges, the question that should be center stage in research on mindreading is "*how* [people] solve the cognitive challenges of mindreading" (Apperly, 2011, 109). Telling us that a

mindreader has the concept BELIEF or the concept DESIRE, Apperly notes, does not explain how the mindreader is able to infer the content of beliefs or to predict what an agent will do next. These are the hard questions of mindreading, the ones that need to be addressed if research in the area is to make progress. It is our contention that Leslie's metarepresentational theory of pretense provides a very clear example of the shortcomings that Apperly describes. And it is our hope that our critique of that theory will encourage debate about what does, and does not, count as an adequately specified theory in this domain.

9. Conclusion

The main difference between Leslie's metarepresentational theory of pretense and the theory offered by N&S is that on Leslie's theory both the recognition and the production of pretense behavior require a child to form mental representations that include the mental state concept PRETEND. Thus "pretend play ... [is] a primitive manifestation of the ability to conceptualize mental states" and "pretense is an early manifestation of ... *theory of mind*" (1987, p. 424 & p. 416). On the N&S theory, by contrast, neither children engaging in solitary pretense nor children engaging in shared pretense need use any mental state concepts. However, as F&L have shown, the N&S version of the behavioral theory of pretense is fatally flawed. In this paper, we have set out a new account, the pretense game theory, that is clearly in the spirit of the N&S theory, though it avoids the problems set out by F&L. We have also argued that in its current form Leslie's metarepresentational theory is not a strong alternative to the pretense game account, since the metarepresentational account is under-specified. It purports to explain pretense by positing an innate concept, PRETEND, and claiming that pretense recognition and behavior "spring from" this concept. But it tells us nothing at all about how the PRETEND concept enables children to recognize what pretense partners are pretending or how children manage to produce appropriate pretense behavior. Our critique of Leslie's theory is of a piece with Apperly's contention that attributing a mental state concept to a person does not go "a long way to explaining their ability to mindread" (Apperly, 2011, p. 109). We will be well satisfied indeed if this paper encourages further debate on what does, and does not, count as an acceptable explanation in this area of cognitive science.

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¹⁹ For some very brief comments relevant to this problem, see Leslie and Happé (1989, 210) and the papers cited in fn. 10.

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