Beliefs as inner causes: the (lack of) evidence
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Abstract: Many psychologists studying lay belief attribution and behavior explanation cite Donald Davidson in support of their assumption that people construe beliefs as inner causes. But Davidson's influential argument is unsound; there are no objective grounds for the intuition that the folk construe beliefs as inner causes that produce behavior. Indeed, recent experimental work by Ian Apperly, Bertram Malle, Henry Wellman, and Tania Lombrozo provides an empirical framework that accords well with Gilbert Ryle's alternative thesis that the folk construe beliefs as patterns of living that contextualize behavior.

1. Introduction

In 1949, Gilbert Ryle lambasted the "paramechanical" thesis that the everyday attribution of beliefs amounts to theoretically positing inner—"occult"'—causes of behavior. In its place, Ryle proposed that the folk construe beliefs as patterns of living. When we say that *s* believes that *p*, we mean that *s* is disposed to act, react, think, and feel as if *p* "in a thousand different situations" (Ryle 1949: 44).[1] By interpreting my niece as believing that her mom loves her unconditionally, for example, I can fit what might be otherwise puzzling individual behaviors—such as freely confessing to her mom that she did something wrong—into a coherent pattern of actions, thoughts, and feelings. Her behavior makes sense given that she is prone to telling her mom about everything important in her life, feeling safe with her mom, thinking that her mom will forgive her, and so on. By attributing a belief to her, I can better understand my niece without making any assumptions about underlying psychological processes.

Ryle's dispositionalist account of lay belief attribution was popular—orthodox, even—for about a decade; it thrived alongside the influential philosophical psychologies of the later Ludwig Wittgenstein and his student Elizabeth Anscombe (1957). Since Donald Davidson published "Actions, Reasons, and Causes" in 1963, however, the consensus in philosophy of mind and psychology has turned firmly anti-Rylean. According to Davidson, only causes that mechanically produce behavior serve to explain behavior. And, in the course of everyday life, people frequently attribute beliefs when explaining intentional behaviors. So, Davidson concluded that the folk construe beliefs as the inner causes—the cogs in cognitive systems—that produce the intentional behaviors they explain. I will call this thesis 'Davidson's dogma'.

Although the debate in action theory still rages (D'Oro & Sandis 2013), most contemporary philosophers of mind assume Davidson's dogma. It forms a key premise in both Jerry Fodor's (1987) argument for the existence of belief and Paul Churchland's (1984) argument

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[1] The popular miscategorization of Ryle as a 'logical behaviorist' notwithstanding, he numbered "feeling" (1949: 92, 1954: 59), "inferring, imagining" (1949: 65), "thinking, pondering, reflecting, and the like, namely … what Rodin's *Le Penseur* looks as if he is absorbed in" (1979: 65), among the passivities and activities towards which believers are disposed.

for the non-existence of belief.[2] Neither author offers new arguments in support of this premise. Churchland (1970: 214-215) thanks Davidson for establishing the dogma, and works out some of its consequences. Fodor simply "stipulates" that the folk construe beliefs as inner causes, explaining that "this seems to me intuitively plausible; if it doesn't seem intuitively plausible to you, so be it. Squabbling about intuitions strikes me as vulgar" (1987: 10).[3]

I do not intend to squabble about intuitions. Instead, I will assess candidate objective grounds for Davidson's dogma. In §§3 and 4, I will examine two fecund scientific literatures on lay belief attribution. Psychologists studying theory of mind and behavior explanation often cite Davidson in support of their assumption that the folk construe beliefs as inner causes, but they provide no empirical evidence to support Davidson's dogma. Indeed, recent experimental findings better fit the Rylean view that the folk construe beliefs as patterns of living.[4] Moreover, as I will argue in §5, Davidson's influential argument for his dogma is unsound. Against Davidson, beliefs can serve as reasons that uniquely explain actions without being construed as inner causes that produce those actions. Ryle's dispositionalism could already account for the supposedly mysterious connection that Davidson identified between beliefs and the actions they uniquely explain.

Cognitive scientists can (and do) use the beliefs that humans attribute to each other in everyday life as models for the cognitive causes of behavior (Godfrey-Smith 2005). Fodor might be right that such modeling is the only fruitful way to study cognition, or Churchland might be right that neuroscientists will prove Fodor myopic. Regardless, I intend to reveal that there is no extant justification, beyond philosophers' and psychologists' bare intuitions, for the assumption that the folk regularly construe beliefs as inner causes that produce behavior.

2. Unpacking Davidson's dogma

Before assessing the empirical evidence, it is worth getting a firmer grasp on what it would mean for the folk to construe beliefs as inner causes that produce behavior.

2.1. …beliefs as inner causes that produce behavior

In this statement of Davidson's dogma, the adjective 'inner' serves primarily to clarify the sense of the noun 'cause'. For a cause to be construed as inner, in the sense Ryle (1949: 19) criticized, it must be involved in an unobservable mental process that produces observable

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[2] Fodor: "commonsense psychology takes for granted that overt behavior comes at the end of a causal chain whose links are mental events—hence unobservable … we are all—quite literally, I expect—born mentalists and Realists; and we stay that way until common sense is driven out by bad philosophy" (1987: 7).

Churchland: commonsense psychology is "a theory that postulates a range of internal states whose diverse causal relations are described by the theory's laws" (1984: 98).

[3] The practice of intuiting Davidson's dogma has not rescinded among philosophers of mind since the 1980s; see Nichols & Stich (2003: Chapter 1), Goldman (2006: Chapter 2), Egan (2014: 138), Mandelbaum (2014: footnote 68), Carruthers (2015a: Chapter 2), Crane (2016: 38-49), and Quilty-Dunn & Mandelbaum (2017, Section 3.1).

[4] Recent (broadly) Rylean philosophers of mind include Lynne Rudder Baker (1995), Daniel Dennett (1998), Eric Schwitzgebel (2002), and Julia Tanney (2013).

behavior. Strictly speaking, however, the unobservability of belief is not entailed by Davidson's dogma.[5] Instead, what all proponents of Davidson's dogma accept is that the folk posit beliefs as cogs in the mental (as opposed to physical) systems that generate behavior. Thus, in what follows, readers should take the term 'inner cause' to signify 'cog in a cognitive mechanism', with no prejudice as to observability.

In Davidson's own terminology, inner causes are the mental variety of 'producing causes' (1967: 703). Producing causation is itself but one variety of causation countenanced by folk reasoning. Ned Hall has persuasively argued that "our thinking about causation recognizes two basic and fundamentally different varieties of causal relation": dependence and production (2004: 276). Dependence causation

> is simply that: counterfactual dependence between wholly distinct events. In this sense, event c is a cause of (distinct) event e just in case e depends on c; that is, just in case, had c not occurred, e would not have occurred. The second variety is rather more difficult to characterize, but we evoke it when we say of an event c that it helps to generate or bring about or produce another event e, and for that reason I call it 'production'. (Hall 2004: 225)

Ryle readily allowed that the folk construe intentional behaviors as being counterfactually dependent on beliefs. Just in case my niece did not believe that her mom loves her unconditionally, she would not have freely confessed to her mom that she did something wrong.[6] The thesis that beliefs are dependence causes of behavior is uncontroversial.[7] Davidson's dogma

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[5] For a recent argument against the observability of belief, see Spaulding (2015); for defenses, see Gallagher & Hutto (2008) and (at least for 'belief-like states') Herschbach (2015).

[6] Philosophers offer various proposals about how to make this dependence relation precise. Famously, David Lewis (1973) argued that dependence should be understood via bare counterfactual about possible worlds: my niece's belief caused her confession just in case there is a possible world in which both my niece's belief and her confession obtain that is closer to the actual world than any possible world in which her belief obtains but her confession does not. James Woodward (2003) has since argued that our thinking about causation reflects our practical interests, proposing an interventionist account of dependence causation: my niece's belief caused her confession just in case manipulating her belief would have altered (or prevented) her confession. Woodward acknowledges that his interventionist account is "a counterfactual theory of causation, not in the [Lewisian] sense that [it] claim[s] to offer a reductive analysis of causal claims in terms of some (noncausal) notion of counterfactual dependence, but in the sense that [it] claim[s] that there is a systematic connection between causal claims and certain counterfactuals" (2003: 70). Moreover, Reutlinger (2012) argues that, because Woodward's theory concerns only metaphysically possible interventions rather than physically possible interventions (Woodward 2003: 10-11), it collapses into a bare counterfactual account of dependence causation á la Lewis.

[7] Two caveats. First, eliminativists would argue that beliefs—being non-existent—are not dependence causes of behavior. Second, some theorists might consider it a mistake to think of the explanatory relationship between beliefs and behavior as causal at all (Reutlinger 2017). In this article, I am agnostic about whether belief explanations always invoke causes of some sort; I am committed only to the conditional that if belief explanations are causal explanations, then they paradigmatically invoke dependence, not producing, causes. Nevertheless, since Ryle (1949: 122) and other dispositionalists (e.g.

is the different, stronger claim that the folk construe beliefs as producing causes: as cognitive states that function to generate behavior.[8]

2.2. The folk construe…

Across cultures, people engage daily in the social practice of interpreting themselves and other people as believers. The psychologist Ian Apperly calls the folk ability to attribute beliefs (and other mental attitudes) 'mindreading', instead of the more traditional 'theory of mind', because the latter

> implies that mindreading consists in having a theory about how the mind works. In fact this is, at best, just one theoretical possibility among many. And for my purposes it unhelpfully suggests that 'theory of mind' is something that one *has* rather than something that one *does*. (Apperly 2011: 3)

Apperly's contrast between actively engaging in mindreading and passively having a theory of mind is reminiscent of Daniel Dennett's earlier contrast between 'folk craft' and 'folk theory': "between what we learn to do, and what our mothers and others have actually told us the craft was all about when they enunciated the lore, for what the anthropologists tell us is that craft and ideology are often quite distinct" (Dennett 1998: 81). As Dennett insinuates, there may be a gulf between how folk craft and folk theory respectively construe belief.

While admitting that "there is little doubt that many folk subscribe to the idea that mental phenomena [including belief] are causal in a productive, mechanical way", Daniel Hutto speculates that this is "not because the folk have closely attended to what they do when using their folk concepts in practice" (2011: 141). Hutto suggests that folk theorists often construe belief as causally productive of behavior because they hold theoretical commitments to a 'mechanical/causal' worldview. In any case, the fact that Fodor's Granny (Fodor 1987: 6) has a pet theory that explicitly countenances Davidson's dogma does not entail that her folk craft—her cognitive ability to attribute belief—implicitly construes beliefs as causally productive of behavior. By arguing that the everyday attribution of beliefs does not amount to positing occult causes, Ryle certainly did not intend to deny that ordinary folks had fallen for the theoretical allure of the myth of the ghost in the machine. He intended only to deny that the myth had infected people's folk craft of belief attribution.

Hutto might be wrong. Some philosophers claim that we have transparent conscious

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Baker 1995) countenance belief explanations as invoking dependence causes, I adopt that working hypothesis.

[8] Whereas Lewis (1973) and Woodward (2003) have offered clear (if controversial) analyses of dependence, less has been done to unpack production. Davidson's (1967) view was that producing causation should be explicated in terms of laws of nature. Wesley Salmon (1984) and Phil Dowe (2000) argue that producing causation is the transfer of a conserved quantity (such as mass) from cause to effect, while Stuart Glennan (1996) maintains that claims about producing causation posit mechanisms. Analytic disagreements aside, these theorists agree that explanations of production unveil (in one way or another) the mechanism by which cause leads to effect. Accordingly, my niece's belief caused her confession just in case it was a cog in the cognitive mechanism that generated the speech act.

access to the concept of belief that we employ when mindreading. If they are right, then perhaps folk theory accurately recounts folk craft. Alternately, it is possible that the mechanical/causal folk theory exerts strong top-down influence on the folk craft, such that the mindreader ordinarily construes beliefs as inner causes precisely because of her explicit theoretical commitments about the nature of belief. I do not propose to attempt to settle the (largely empirical) question of the relationship between folk theory and folk craft in this article. Whatever the relationship between folk theory and folk craft, it is how belief is construed in crafty mindreading that is at stake in the debate over Davidson's dogma. After all, it is the folk craft of mindreading—the nearly universal human ability to attribute belief, desire and other mental attitudes—that subserves everyday belief explanations.

2.3. Davidson vs. Davidson's dogma

I have defined Davidson's dogma as portrayed in mainstream philosophy and psychology: as the thesis—widely credited to Davidson—that the folk craft of mindreading construes beliefs, themselves, as producing causes of behavior. This received version of Davidson's dogma is my primary target. Before moving on, however, I should note that Davidson's dogma, as received, does not perfectly represent Davidson's actual view. Two oft-overlooked subtleties of Davidson's actual account of belief attribution warrant mention.

First, Davidson was a dyed-in-the-wool Rylean about the central purpose of lay belief attribution: in light of a belief, "an action is revealed as coherent with certain traits, long- or short-termed, characteristic or not, of the agent, and the agent is shown in his role of Rational Animal" (1963: 8). However, Davidson warned that "it is an error to think that, because placing the action in a larger pattern explains it, therefore we now understand the sort of explanation involved" (1963: 10). Whereas Ryle averred that belief explanation proceeds simply by establishing that an action counterfactually depends on a belief, Davidson required an additional element: belief explanations must also highlight an inner cause that produced the action under scrutiny.

Second, Davidson did not hold that the folk literally construe beliefs, themselves, as inner causes. Like Ryle, he held that "attitudes [including beliefs] are dispositions to behave in certain ways" (Davidson 1997: 72), and that the folk veridically attribute them as such (1991: 215). In considering objections to his dogma, Davidson conceded that beliefs, being dispositional states as opposed to events, could not be producing causes. Instead, belief attribution "gives a cause only on the assumption that there was also a preceding event" (1963: 12); the folk construe beliefs as "causal conditions" (1974: 232) that are "very closely associated" (1963: 12) with inner causes.[9] Strictly speaking, the folk do not construe beliefs as causes. Instead, belief explanations obliquely refer to the "onslaught" of a belief—a mental event such as noticing, remembering, or changing one's mind—as the inner cause of the behavior being explained (1963: 12; 1970: 208). For example, by attributing the belief that her mother loves her unconditionally to my niece, I might be pointing towards the event of her feeling of comfort as the inner cause that produced her behavior. Thus, the nuanced version of Davidson's dogma—the version actually endorsed by Davidson—is that

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[9] Davidson did not unpack this aspect of his view, but Fred Dretske (1988) has provided an influential account of how beliefs might serve as causal conditions—'structuring causes'—in explanations of behavior.

the folk attribute beliefs partly in order to indirectly invoke mental events that are producing causes.[10]

To repeat: my central goal is to reveal the lack of justification for the received version of Davidson's dogma defined above, rather than the nuanced version endorsed by Davidson himself. Nevertheless, my critique generalizes to Davidson's actual view; just as there is neither evidence nor a sound argument that the folk construe beliefs as inner causes, there is neither evidence nor a sound argument that belief attributions successfully explain behavior only by obliquely invoking a mental event that produced the behavior.[11] Thus, following Davidson's own habit, I will usually write as if there is no difference between the two views.

3. The (lack of) evidence from mindreading research

Fodor is right: Davidson's dogma is intuitively appealing. Why did (ecosocialist grad student) Patrick walk to the minifridge to fetch a bottle of meal replacement beverage Soylent 2.0?[12] Because Patrick believed there was a bottle of Soylent in the fridge. How does this belief explain Patrick's behavior? Well, it would explain Patrick's behavior if it played a role in producing it.

Intuitive appeal aside, the question at hand is whether we have objective grounds for inferring that this is actually how the folk construe the beliefs they attribute to each other in everyday life. One candidate ground is Davidson's argument, which I will assess in §5. In this section and the next, I will explore sources of evidence that were unavailable to Davidson; over the last forty years, psychologists have conducted a flurry of empirical research on the folk ability to attribute belief.

3.1. The empirical literature on lay belief attribution

Around the age of four, most humans explicitly demonstrate the ability to differentiate between their own true belief and the false belief of another agent (Wimmer & Perner 1983) or their own past self (Hogrefe, Wimmer, & Perner 1986; Gopnik & Astington 1988). This developmental timeline fluctuates from culture to culture, but the central result is cross-culturally robust (Slaughter & Perez-Zapata 2014). At some point in their cognitive development, all

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[10] Nevertheless, for the sake of expediency (Davidson 1974: 232), Davidson frequently lapsed into referring to beliefs themselves as causes, rather than causal conditions.

[11] I am not denying that belief attributions ever serve to explain behavior by indirectly invoking mental events that produced the behavior in question, much less that belief attributions do sometimes indirectly invoke such mental events. On the contrary, both claims are compatible with accepting Ryleanism and rejecting Davidson's causalism. Davidson asserted that belief attributions *can only* serve to uniquely explain behavior by dint of invoking inner causes. My Rylean view is (as Davidson admitted) that the folk do not construe beliefs themselves as inner causes, and (contra Davidson) that belief attributions often, and primarily, serve to uniquely explain behavior without invoking inner causes. This view is compatible with the hypothesis that belief attributions sometimes offer a secondary explanation of behavior by obliquely invoking mental events as inner causes.

[12] Soylent 2.0, the ready-to-drink product from Rosa Lab's line of beverages designed to meet the nutritional requirements of the average adult, is popular among graduate students because of its ease-of-use and low price point. It tastes, and is textured, like watery pancake batter.

normally-abled humans gain the ability to attribute (true and false) beliefs to themselves and other agents. For many years, mindreading research focused almost exclusively on whether young children were able to pass various false belief tests. This "neurotic task fixation" (Gopnik et al 1994) was well-motivated: more than any other developmental milestone, the understanding that people can sincerely misrepresent states of affairs unlocks children's social worlds.

Since the turn of the century, however, researchers have begun to test mindreading more systematically. A barrage of evidence suggests that children much younger than four—even within the first year of life—demonstrate some capacity for mindreading, though they lack the ability to reason explicitly about false beliefs (Scott & Baillargeon 2017). Meanwhile, research on adult mindreading reveals that the ability to track behavioral cues associated with what somebody believes, the ability to infer what somebody believes, the ability to hold in mind what somebody believes, and the abilities to predict, explain, and interpret somebody's behavior on the basis of what they believe all make distinct (and often significant) demands on the cognitive resources of mindreaders (Apperly 2011). Experiments also suggest that the explicit attribution of (especially false) belief is subject to egocentric biases, even when executed by skilled adult mindreaders (Epley et al 2004; Birch & Bloom 2007).

These findings on the belief attribution abilities of humans at every stage of development have led some prominent researchers to adopt two-systems accounts of mindreading.[13] According to two-systems accounts, the high-level ability to reason about beliefs does not come online until the age of four. However, low-level mindreading (or submindreading) abilities allow infants to track beliefs in an automatic and cognitively efficient manner. Low-level mindreading may consist in modular mechanisms specialized for tracking mental attitudes (Butterfill & Apperly 2013a; Roessler & Perner 2013), or it may recruit domain-general cognitive mechanisms, "such as those involved in automatic attentional orienting and spatial coding of stimuli and responses" (Heyes 2014: 140). In either case, low-level processes allow mindreaders to track behavioral cues associated with belief, and respond appropriately, without actually attributing beliefs. As Cecilia Heyes puts it, the low-level mindreader "is doing the things that he or she would do if he or she was [attributing belief], but the cognitive processes controlling his or her behavior do not represent mental states" (2014: 132).[14] Together with "the rich endowment of social knowledge that we gain through development" (Apperly 2011: 155; see Ratcliffe 2006; Andrews 2012), low-level mindreading abilities lay the cognitive foundation for the high-level ability to represent beliefs in a controlled but cognitively inefficient manner.

On this two-systems model, the ability to attribute belief co-opts low-level capacities to track how believers register their environments and are disposed to think, feel, and behave in

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[13] Nativists have pushed back on the two-systems interpretation of the evidence (Carruthers 2015b; Westra 2016; Scott & Baillargeon 2017), but a Rylean account of mindreading jibes with one-system accounts as well. According to one-system Ryleanisms, mindreaders' ability to attribute beliefs (qua patterns of dispositions) is of a piece with their ability to track dispositions. Nativist, as opposed to developmentalist (Wellman 2014), one-system accounts make the further claim that this univocal ability is innate. None of the evidence that leads nativists to their nativism entails that infants must construe beliefs as inner causes.

[14] Butterfill and Apperly take low-level mindreaders to attribute mental "registrations" (2013a: §4.3) but, in replying to Zawidzki (2013), make clear that registrations are not inner causes (2013b §5).

context. The robust predictive success of these low-level capacities is made "possible because our everyday social lives include a high degree of regularity that can be exploited by inflexible … processes, and captured in social scripts, schemas, roles and habits" (Apperly 2011: 155). Hijacking the information from low-level capacities to explicitly attribute beliefs is just one more way to pick out patterns in mindreaders' noisy social environments. However, as Roessler and Perner argue, the attribution of belief rises above other forms of social knowledge in that it "enables [the belief attributor] to see a person's reasons relative to a different perspective" (2013: 46): the perspective of the believer herself. Whereas social scripts help low-level mindreaders understand the objective reasons why an agent might act, belief attribution enables an understanding of the actual beliefs (and thus reasons) an agent possesses.

What is involved in the possession of a belief? At least this: to possess a belief is to represent—or misrepresent—the world as being some way. According to Josef Perner's (1990) influential interpretation, mindreaders who pass false belief tasks demonstrate their understanding that believers act in accordance with subjective (mis)representations of their environments, rather than objective features of those environments themselves. Younger "children fail to understand belief because they have difficulty understanding that something represents; that is, they cannot *represent* that something is a *representation*" (Perner 1990: 186). On Perner's view, children have no problem realizing that people act for reasons. The tricky aspect of belief attribution is that "it presents its practitioners with a *perspective problem*" (Roessler & Perner 2013: 40): kids have to figure out that believers act in accordance with representations that comprise idiosyncratic perspectives.

Two-systems theorists stress that humans use explicit belief attribution sparsely, to supplement more routine low-level social cognition.

> In human adults, both systems exist in parallel. The cognitively efficient system plays a central role in guiding on-line social interaction and communication. The cognitively flexible system enables adults to engage in top-down guidance of social interaction (such as anticipating what the audience of a lecture might know, or working out how one misjudged the audience afterwards), and in explicit reasoning about the causes and justifications of mental states (as in everyday practical reasoning, or jurisprudence). (Apperly & Butterfill 2009: 966)

In most social situations, it is enough to use behavioral cues to prompt cognitive routines that automatically guide social interaction. Occasionally, though, mindreaders get a better handle on how to interact—or how they should have interacted—with their peers by explicitly reasoning about how they represent their shared world.

3.2. A Rylean interpretation of the evidence about lay belief attribution

The two-systems account of mindreading, thus stated, is compatible with Ryle's dispositionalist account of lay belief attribution. Low-level mindreading, combined with social knowledge, enables mindreaders to track and respond appropriately to believers' registrations and behavioral dispositions, and high-level mindreading enables mindreaders to group and make sense of salient patterns of those dispositions (along with dispositions to have associated

thoughts and feelings) under the heading of 'belief'. By attributing beliefs, mindreaders fit otherwise puzzling behaviors into coherent patterns, thereby anticipating behaviors, thoughts and feelings for which there are not immediately available behavioral (or social situational) cues.

As Perner argues, full-blown belief attributors find these patterns coherent because they grasp that believers represent the world from their own idiosyncratic perspective. On the Rylean interpretation, this representational aspect of belief ties the relevant dispositions together. What all of the dispositions that compose any given belief have in common is that they are dispositions towards thoughts, feelings, actions or reactions that make sense from the perspective of somebody who represents the world in a certain way. For example, my niece's tendencies to tell her mom everything and feel safe in her mom's company make sense from the perspective of a young girl who represents her mother as loving her unconditionally. To say that somebody believes p is not to say that there exists a discrete cog in the believer's cognitive system that carries the representational content p; instead, it is to say that there exists a believer who lives as if p. This Rylean interpretation accounts nicely for the logic of representation, including the notion that beliefs represent the world from a unique perspective.[15] All it dispenses with is Perner's (1990: Chapter 2) conviction—presented without appeal to empirical evidence—that the folk construe representations as discrete inner states which play productive causal roles in the mind.[16] By merging with Ryleanism, the two-systems account of mindreading can distinguish belief attribution from less sophisticated forms of social cognition without assuming that belief attributors construe beliefs as inner causes.

3.3. Mindreading researchers assume Davidson's dogma

Nevertheless, mindreading researchers typically assume the truth of Davidson's dogma. On the prevailing two-systems view, the construal of beliefs as inner causes is part of what distinguishes high-level mindreading from low-level mindreading. Perner insists that, perhaps unlike low-level mindreading, belief attribution explains action "by being explicit about the intervening mind" (2010: 257), and Apperly and Butterfill (2009: 958) write that "whatever [infants] represent does not involve the causal and justificatory structure that is constitutive of adults' flexible belief reasoning (Davidson, 1989, 1995)." Infants do not (even implicitly) construe

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[15] This Rylean account of the representational content of belief is admittedly schematic. It has been developed in more detail by Ruth Barcan Marcus (1990) and Robert Matthews (2007). According to Matthews's measurement-theoretic view of propositional attitude reports, belief attributions measure beliefs by relating believers to representational contents, but beliefs themselves are not contentful. In any case, every naturalistic account of the representational content of belief on offer is (infamously) less than satisfying, so the schematicity of Rylean accounts of representation is not necessarily a strike in favor of Davidson's dogma.

[16] There is good evidence (Estes, Wellman & Woolley 1989; Watson, Gelman & Wellman 1998) that, from an early age, people understand conscious thoughts and feelings—what Piaget termed 'mental things'—to be inner, unobservable states. However, even proponents of Davidson's dogma (Perner 1990: 170-178; Wellman 2014: 47) distinguish between beliefs (and other attitudes) and conscious mental things. To my knowledge, there is no corresponding evidence that people construe beliefs as inner. (And, as mentioned in footnote 1, the existence—and folk recognition—of inner states of consciousness does not impugn Ryle's theory of mind.)

beliefs as inner, producing causes. Thus, if folks construe beliefs as cogs in cognitive systems, then this construal is due to the exercise of the later maturing ability to attribute belief explicitly. To my knowledge, the mindreading literature provides no evidence—indeed, features no experiments designed to test the hypothesis—that explicit adult mindreading does construe beliefs as inner causes. It is, of course, consistent with the evidence that kindergarteners construe beliefs as inner causes, and pass false belief tasks by explicitly reasoning that the agent's false belief causally produced their behavior. Studies do show a significant correlation between the ability to pass false belief tasks and the ability to reason counterfactually (Riggs & Peterson 2000), and counterfactual reasoning is in turn linked to causal reasoning (Gerstenberg et al 2015). But these links are not enough to establish that the folk construe beliefs as inner causes. Recall Hall's distinction between counterfactual dependence causes and producing causes.

Belief attribution is linked to counterfactual reasoning, which is linked to causal reasoning; but counterfactual reasoning is not—indeed, logically could not be—more closely linked to reasoning about producing causes than reasoning about dependence causes (Menzies 2015). Counterfactual reasoning is, after all, the core mechanism of the folk understanding of dependence causation (see note 8). Thus, none of the available evidence speaks against the Rylean option that mature mindreaders construe behaviors as merely counterfactually dependent on beliefs without positing beliefs as inner causes.[17] The hypothesis that the folk construe beliefs mechanistically—as producing causes—and the hypothesis that the folk construe beliefs as mere counterfactual dependence causes are equally consistent with the evidence from mindreading research.[18]

Why, then, do mindreading researchers like Perner and Apperly assume that belief attributors construe beliefs as producing causes? Presumably because it is intuitive and, after all, the standard view (thanks to Davidson). Butterfill and Apperly (2013a: 611) assert that "on any standard view, propositional attitudes form complex causal structures … and are individuated by their causal and normative roles in explaining thoughts and actions (Davidson 1980, 1990)."[19] Apperly and Butterfill also recruit Davidson's dogma to help explain the difference between high-level mindreading and low-level mindreading.

> Why is belief reasoning costly? At least part of the cost arises from the type of reason-giving explanation in which beliefs feature. For example:
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> > She reached for the salt container because she saw the white grains, and—

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[17] The Rylean U.T. Place (1996: 30) has argued from ordinary use and epistemic limitations that intentional behaviors are counterfactually dependent on beliefs, which are in turn counterfactually dependent on brain processes. For my purposes, the relevant issue is the folk construal of beliefs, rather than the metaphysics of dispositions. Whether or not ordinary use and epistemic limitations are arbitrators of fundamental metaphysics, they are indispensable sources of insight into folk construals. If the folk construe beliefs as identical to patterns of dispositions, and do not construe dispositions as identical to inner producers of behavior, then the folk do not construe beliefs as identical to producing causes.

[18] I will discuss research that does tell between these two hypotheses in §4.

[19] Perner and Roessler agree with Butterfill and Apperly that this standard view is "as Davidson has taught us" (Perner & Roessler 2009: 207; Roessler & Perner 2013: 26).

believing them to be sugar—intended to sweeten her pie.

> Reason-giving explanations like this one have several features (Davidson 1980, 1990). First, they involve complex causal structures: the perceptions influence beliefs which, together with desires, lead to intentions which guide action. Note how reason giving explanations invoke, explicitly or implicitly, multiple interacting causes, some of which may be far removed in time and space from the salient causes of an action. (Apperly & Butterfill 2009: 25; see Butterfill & Apperly 2013a: 629)

Apperly and Butterfill marshal strong evidence in support of their hypothesis that explicit belief attribution is cognitive costly. They do not marshal any evidence, beyond citing Davidson, that part of this cost is due to the difficulty inherent in representing beliefs as inner causes that produce behavior.

This lack of evidence is striking. Nevertheless, the literature on mindreading may not be the best place to look for evidence to back up Davidson's dogma. Mindreading researchers investigate the cognitive ability to attribute belief, which is not, in and of itself, exactly what was at issue in the debate between Davidson and Ryle. The issue was the role that belief attribution plays in lay explanations of behavior.

4. The (lack of) evidence from attribution theory

Psychologists in the field known as 'attribution theory' have been studying how the folk explain behavior since the pioneering work of Fritz Heider in the 1940s and '50s.

4.1. The empirical literature about lay behavior explanation

According to classic Heiderian attribution theory, folk explanations of behavior divide in two: some explanations construe behavior as produced by situation (or external) causes and some explanations construe behavior as produced by person (or internal) causes (Kelley 1967; Ross 1977). This person/situation dichotomy is empirically motivated by phenomena such as the Fundamental Attribution Error—the tendency to overestimate person factors, and underestimate situation factors, when explaining the behavior of others (Jones & Harris 1967). Heiderian attribution theory generates a straightforward verdict on Davidson's dogma. The folk either construe beliefs as person causes or as situation causes, and they surely do not construe beliefs as situation causes. (Nor do the folk lump beliefs with more nebulous person causes, like personality traits or abilities.) Instead, Heiderian attribution theorists number beliefs among "the core [inner] processes which manifest themselves in overt behavior" (Heider 1958: 34).[20]

Since the late 1970s, however, a strong minority voice has spoken against this way of carving up lay explanations of behavior (Buss 1978; Kalish 1998; Malle 2011). According to these dissidents, many folk explanations of behavior invoke neither situation causes nor person causes as typically understood. Instead, many explanations invoke reasons for acting. Instead of identifying what produced the behavior to be explained, reasons explanations identify what

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[20] A caveat: just as Davidson was not actually a proponent of Davidson's dogma, Malle (2004: Chapter 1; 2011: 301-304) persuasively argues that Heider was not actually a classic Heiderian attribution theorist.

rational justification the agent had for acting as they did. When people demand an explanation for Patrick's behavior of walking to the fridge, they do not want to know what cognitive machinery produced his footsteps. They want to know what rationalized his purposeful journey to the fridge.

Bertram Malle has developed the most thorough new-wave attribution theory to date. Malle is struck that high-level mindreading, including the attribution of belief, "is anchored in the folk concept of intentionality," that is, the purposiveness of action. Malle allows that some behavior explanations—particularly explanations of accidental behaviors—make straightforward reference to classic inner person causes, "in the same mechanical way that physical causes explain physical events" (2004: 61). (Consider the explanation that 'the boy cried out because he felt a pain'.) Malle denies, however, that explanations of accidental behaviors have the same explanatory structure as explanations of intentional behaviors, such as 'the boy cried out because he believed doing so would get his mother's attention'. According to Malle, classic attribution theory fails to account for systematic differences between explanations of intentional behaviors and explanations of unintentional behaviors with inner causes. Both of these varieties of explanation attribute the source of behavior to the person rather than the situation, but they serve strikingly different explanatory purposes.[21]

Malle's research has shown that these systematic differences between explanations of accidental behaviors and explanations of intentional behaviors can be put down to the former invoking mere inner causes whereas the latter invoke reasons—that is, mental state terms coded as beliefs, desires, or values. People are consistently good at categorizing behaviors as intentional or unintentional (Malle & Knobe 1997). And the more intentional people perceive a behavior to be, the more likely they are to invoke reasons to explain that behavior. Similarly, people rate behaviors as more intentional when they have been explained by invoking reasons, relative to when they have been explained by invoking mere inner causes (Malle 1999: 28-31). The take-away messages from these findings are that the folk attribute beliefs (and other reasons) to explain actions which agents intended, and that the folk conclude that agents must have intended behaviors that have been explained in terms of beliefs.

This fixation on explaining intentional actions in terms of reasons emerges early in human life. Henry Wellman's lab has shown that approximately 70% of young children's 'why-questions' request explanations for actions (Hickling & Wellman 2001; Frazier, Gelman & Wellman 2009), even though kids do not thoroughly grasp the range of ways in which beliefs explain actions until high-level mindreading comes online (Wellman, Cross & Watson 2001). When preschoolers answer why-questions themselves, they draw a clear line between reasons and causes, distinguishing between mistaken actions requiring explanation by reference to beliefs and accidental actions requiring explanation by reference to producing causes in the physical environment (Schult & Wellman 1997; Inagaki & Hatano 2002). In line with Malle's findings, Wellman's lab has found that whereas "preschoolers provided physical explanations almost exclusively for physically caused human movements," "nearly 100% of children's explanations

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[21] According to Malle's (2004) full theory, lay explanations of intentional behavior invoke reasons, causal histories of reasons, or factors that enable agents to act for their reasons. All three kinds of explanation invoke reasons; none invoke mere inner causes.

for intended actions were psychological" (Wellman 2014: 45): that is, referred to attitudes like beliefs or desires. Moreover, researchers have shown that parent-child conversations regarding how actions causally depend on beliefs influence how rapidly children develop the competence to pass false belief tasks (Dunn & Brown 1993; Bartsch & Wellman 1995: 137-142), whereas parent-child conversations regarding physical causality do not speed up mindreading development (Ruffman et al 2002).

In order to further examine the link between belief attribution and judgments of intentionality, Malle and his lab have investigated the motivations for belief attributions in lay explanations of behavior. Whereas explanations of unintentional behaviors focus on answering the question 'what produced the behavior?', explanations of intentional behaviors focus on answering a more diverse range of questions. For example, belief explanations are used to answer questions such as 'why on Earth would the agent purposefully act in such a weird way?' (Korman & Malle 2016), 'what justified the agent in acting in this way?' (Malle et al 2000), 'should I blame the agent for having acted in this way?' (Monroe & Malle 2017), and the all-important 'how can I appear cool despite having acted in this way?' (Malle, Knobe & Nelson 2007). None of these questions can be answered adequately by bare reference to the producing cause of the agent's behavior. Instead, they must be met by an illustration of the agent's perspective which puts the anomalous, apparently irrational or immoral, or uncool behavior in context. Attributions of belief provide good answers to a wide range of questions about intentional behaviors because they reveal the agent's purpose—or at least a purpose the agent could have had—for acting a certain way (Malle 2004: 72-75).

From six months, humans interpret intentional behaviors teleologically—that is, in terms of the purpose of the action—rather than mechanistically—in terms of how the action is produced (Csibra & Gergely 2013). Tania Lombrozo has argued that this distinction between mechanistic and teleological explanations is "psychologically real and cognitively deep" (2010: 329) by adducing evidence of a link between these two varieties of lay explanation and the two varieties of causation distinguished above. Previous work had shown that the folk understand teleological explanations as a kind of causal explanation (Kelemen & DiYanni: 2005; Lombrozo & Carey: 2006), without differentiating between producing causes and dependence causes. Lombrozo hypothesized that "teleological explanations, by virtue of being 'mechanism-independent,' should encourage a criterion for causation in terms of the dependence of the effect on the cause," and that "in contrast, mechanistic explanations should encourage a criterion for causation that is more sensitive to aspects of the [productive] transmission from cause to effect" (Lombrozo: 2010: 325). Her experiments bore out these predictions. Whereas people tend to judge causality by both production and dependence criteria when providing mechanistic explanations of accidental behavior, they tend to judge causality solely in terms of dependence when providing teleological explanations of intentional behavior.[22] In particular, "when an effect counterfactually depended on two agents who acted intentionally, participants provided very similar causal ratings, no matter that one agent … did not share a transference [i.e., producing cause] relationship with the effect" (*ibid*). In sum, when providing explanations of intentional behavior—including

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[22] Relatedly, Kominsky et al (2015) show that judgments of moral valence affect the counterfactual reasoning that underlies dependence explanations.

explanations in terms of belief—the folk show no clear sign of concern with productive causation. While "teleological explanations are causal explanations … they are nonetheless treated differently from mechanistic explanations:" they invoke reasons, including beliefs, and they apparently do not invoke producing causes (Lombrozo & Vasilyeva 2017: 426). If the folk construe beliefs as inner causes that produce behavior, it makes no discernable difference to the explanations of intentional behavior that they give in terms of belief.

4.2. A Rylean interpretation of the evidence about lay behavior explanation

Like the two-systems account of mindreading, Malle, Wellman, and Lombrozo's findings concerning behavior explanation comport nicely with Ryle's account of belief attribution. From an early age, humans are obsessed with requesting and providing explanations that help them understand other people as purposive agents. By attributing beliefs, mindreaders make sense of each other in terms of patterns of dispositions to behave, think, and feel as if the world were some way. Certain intentional behaviors are counterfactually dependent on these patterns. Mindreaders, recognizing this dependence relation, attribute belief in order to explain why an agent acted abnormally, asocially, or asininely. Why did Kyrie Irving sincerely assert that the Earth is flat? Well, he would sincerely say that only if he believes that the Earth is flat: only if he is the sort of person who goes around telling people not to believe everything they learn in school, watching conspiracy theory videos on YouTube, rolling his eyes when confronted with photographic evidence that the Earth is an oblate spheroid, squinting critically at the horizon, and so on. Attributing a belief to Kyrie reveals his (purported) purpose in sincerely asserting the Earth is flat—that is how he takes the world to be—as borne out by his pattern of living. When the *Washington Post* explains his behavior by reporting that "Kyrie Irving believes the Earth is flat" (Russell 2017), the journalist shows no signs of construing Kyrie's belief as the inner cause that produced his utterance.

Given widespread agreement about the teleological function of folk explanations of intentional behavior, Davidson's dogma is a strictly stronger—less parsimonious—interpretation of belief attribution practices than Ryleanism. Researchers like Malle and Wellman readily acknowledge that belief explanations are different in kind than standard causal explanations: the folk attribute beliefs in order to rationalize and contextualize thoughts, feelings, and behaviors. Davidson's dogma adds to this baseline Ryleanism the proposition that the folk construe beliefs as inner causes. In short, Ryleans claim that beliefs are reasons; Davidsonians claim that beliefs are both reasons and causes. As discussed in this section and the last, there is no extant empirical evidence to justify this unparsimonious addition.

4.3. Attribution theorists assume Davidson's dogma

Nevertheless, Malle and Wellman assume that the journalist must construe Kyrie's belief in Flat Earth Theory as an inner cause of his utterances. Wellman cites Davidson when writing that belief "explanations can appear simple—'he thought Juliet was dead'—but invoke complex causal structure: Perceptions influence beliefs, which together with desires lead to intentions that shape actions" (2014: 42), and notes in passing that one of the goals of belief explanation is "to identify the proximal cause of some event that has occurred" (46). Malle, meanwhile, asserts that "all folk explanations of behavior attempt to provide, among other things, an answer to a causal

question—Why did this behavior occur, what brought it about?" (2004: 148). Although Malle takes great pains to divide mere inner causes of behavior from beliefs that rationalize behavior, he retains traditional attribution theorists' commitment to Davidson's dogma that intentional explanations invoke a "causal mechanism that is uniquely involved in producing intentional action—that of reasoning and choice" (2004: 61). Malle casts reasons (including beliefs) as the special species of inner cause that the folk construe as productive of intentional behaviors. But Malle does not base this commitment on the sort of compelling evidence that drove him to distinguish explanations that invoke reasons from explanations that invoke mere causes. His empirical research does not reveal that the folk construe beliefs as inner causes. Nor does he take it to. Instead, Malle writes that

> reasons are considered causally generative. As mental states, they are seen as bringing about the agent's decision to act. In that sense, people consider reasons to be 'causes' (Davidson 1963, Malle 1999), but causes with unique properties. (2011: 314)

Malle also cites Davidson in that 1999 article: "philosophers have pointed out that reasons are themselves 'causes' if we define causes broadly as factors that generate an event such as behavior (Davidson 1963; cf. Locke & Pennington 1982)" (Malle 1999: 24). What about that Locke & Pennington reference? They provide an overview of the debate in action theory, before settling for "the current philosophical orthodoxy … that far from being incompatible, reasons are themselves but one kind of cause (Davidson 1963)" (Locke & Pennington 1982: 213). Like Malle, Locke & Pennington do not attempt to adduce empirical evidence in support of Davidson's dogma.

All in all, the evidence from mindreading research and attribution theory broadly substantiates Ryle's account of lay belief attribution, and lends no support to the addition of Davidson's dogma. Nevertheless, perhaps thinkers like Malle, Wellman, Perner, Apperly, Churchland, and Fodor are right to rest easy with their intuitions; perhaps Davidson demonstrated that the folk construe beliefs as inner causes way back in 1963.

5. Davidson vs. Ryle

Roessler and Perner (2013: 36) write that "as Davidson taught us, to explain why someone got up at 3 a.m., it is not enough to assemble considerations—"justifying reasons"—that show this to have been the right thing for him to do. What is required is a causal explanation (Davidson 1963)." Without further ado, I will examine the details of Davidson's teachings.

5.1. Davidson's argument for his dogma

As confirmed by attribution theory, the folk take beliefs to rationalize intentional behaviors. Davidson agreed with Ryle on this point. But Davidson argued that when explaining intentional behaviors, it is not enough to nod to any old rationalizing belief. Believers have lots of beliefs that could serve to rationalize any given behavior. In most cases, only one of these is the primary reason upon which the believer actually acted. Only this primary reason properly

explains the behavior in question.[23]

Imagine Patrick's search for Soylent. Patrick has all sorts of beliefs that might rationalize his behavior. As well as believing Soylent to be in the fridge, Patrick believes Soylent to be nutritious, thirst-quenching, filling, and delicious. These are all reasons that Patrick has for fetching Soylent from the fridge; when asked to rationalize Patrick's Soylent-fetching behavior, a mindreader might attribute any one (or more) of these beliefs. However, when asked to explain, rather than merely rationalize, Patrick's behavior, the mindreader's options are much more limited. They cannot attribute any old reason Patrick might have had for fetching Soylent; they must attribute the reason that actually motivated him to fetch Soylent on the occasion in question. For example, it is only the belief that Soylent is filling that explains a hungry Patrick's Soylent-fetching behavior when, as a matter of fact, he fetches Soylent from the fridge because he believes Soylent to be filling.

By Davidson's lights, commonsense explanatory practices usually single out one belief-desire pair as the primary reason that uniquely explains an action. A laundry list of reasons that could rationalize Patrick's behavior cannot suffice when we ask why Patrick fetched Soylent. Only the primary reason that actually motivated Patrick suffices. How does Patrick's primary reason uniquely explain his behavior? What is the "mysterious connection" (1963: 11) between this reason, as opposed to other rationalizations for fetching Soylent, and the behavior it explains? Davidson countenanced only one satisfactory answer to this question: the primary reason that uniquely explains a behavior must be (or invoke) the producing cause of that behavior. "When we offer the fact of the desire and belief in explanation," he wrote, "we imply not only that the agent had the desire and belief, but that they were efficacious in producing the action" (Davidson 1974: 232). Thus, Davidson declared reasons to be causes.

Here is a reconstruction of Davidson's argument.

P1:   There is one primary reason (or set of primary reasons) that uniquely explains each action. (Davidson 1963: 3-8)

P2:   If there is one primary reason (or set of primary reasons) that uniquely explains each action, then that reason (or set of reasons) must be (attributed to invoke) the inner cause that produced that action. (Davidson 1963: 9-12; Davidson 1974: 231-232)

C: The one primary reason (or set of primary reasons) that uniquely explains each action is (attributed to invoke) the inner cause that produced that action. (Davidson 1963: 12)

Davidson's argument is valid but unsound. P1 is dubious; in its place, I would propose that there is one reason (or set of reasons) that uniquely answers each question that seeks an explanation for an action, but that different explanation-seeking questions demand different reasons (Anscombe 1957; van Fraassen 1980; Schaffer 2007). Whether Patrick's belief that Soylent is nutritious or his belief that Soylent is in the fridge uniquely explains his behavior depends on whether we ask 'why did Patrick walk to the *fridge* to fetch Soylent?' or 'why did Patrick walk to the fridge to fetch *Soylent*?'.

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[23] Davidson held that a primary reason consists of a belief-desire pair, but that "it is generally otiose to mention both" (1963: 6). To avoid being otiose, I will generally mention only beliefs.

I will not linger on this point, for even if P1 is true, P2 is false. Construing reasons as inner causes is not the only way to account for the mysterious connection between an intentional behavior and the primary reason that uniquely explains that behavior. Action theorists have proposed several alternative accounts of the mysterious connection over the years (Wilson 1989; Gordon 2002; Sehon 2005; Hutto 2011; D'Oro 2012; Tanney 2013).[24] I will not discuss any of them here. Instead, I will argue that Ryle's (1949) account of belief explanation, which numbered first amongst the accounts that Davidson's argument was designed to overturn (Davidson 1963: footnote 1), already had the resources to demystify the connection.

5.2. Ryle's anticipation of Davidson's argument

According to Ryle, belief explanations are context-placing explanations. A successful belief explanation places "an action in a context that renders it less puzzling" or outrageous (Tanney 2013: 164). In particular, a belief uniquely explains an action when it uniquely reveals how that action fits a broader pattern of living. When explaining somebody's actions by invoking his beliefs,

> the sense in which we 'explain' his actions is not that we infer to occult causes, but that we subsume under hypothetical and semi-hypothetical propositions. The explanation is not of the type 'the glass broke because a stone hit it', but more nearly of the different type 'the glass broke when the stone hit it, because it was brittle'. (Ryle 1949: 50)

In unpacking this analysis, Ryle foreshadowed Hall.

> There are at least two quite different senses in which an occurrence is said to be 'explained'; and there are correspondingly at least two quite different senses in which we ask 'why' it occurred and two quite different senses in which we say that it happened 'because' so and so was the case. The first sense is the causal sense. To ask why the glass broke is to ask what caused it to break, and we explain, in this sense, the fracture of the glass when we report that a stone hit it. The 'because' clause in the explanation reports an event, namely the event which stood to the fracture of the glass as cause to effect. (88)

The first sense of 'because' invokes a producing cause: the event of the stone striking the glass produced the event of the glass shattering.

> But very frequently we look for and get explanations of occurrences in another sense of 'explanation'. We ask why the glass shivered when struck by the stone and we get the answer that it was because the glass was brittle. Now 'brittle' is a dispositional adjective; that is to say, to describe the glass as brittle is to assert a general hypothetical proposition about the glass. So when we say that the glass broke when struck because it was brittle,

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[24] Other than Davidson himself, Alfred Mele (2003, 2017) has provided the most influential arguments in action theory for Davidson's dogma. See D'Oro & Sandis (2013) for a history of the debate.

the 'because' clause does not report a happening or a cause; it states a law-like proposition. (88-89)

The second sense of 'because' establishes a relation of counterfactual dependence between explanandum and explanans. For example, the explanation that 'the glass broke because it was brittle' "says, roughly, that the glass, *if* sharply struck or twisted, etc. *would* not dissolve or stretch or evaporate but fly into fragments" (89). Ryle noted that "people commonly say of explanations of this second kind that they give the 'reason' for the glass breaking when struck" (*ibid*). People invoke producing causes in explanations when they seek to identify what generated an event; people invoke reasons as explanations when they seek to understand an agent's (or object's) character.

Ryle went on to argue that belief explanations are "of the second type and not of the first type" (*ibid*); they invoke reasons, not producing causes. To attribute a belief

> is to say that [the agent] is inclined to do certain sorts of things, make certain sorts of plans, indulge in certain sorts of daydreams and also, of course, in certain situations to feel certain sorts of feelings. To say that he did something from that motive[25] is to say that this action, done in its particular circumstances, was just the sort of thing that that was an inclination to do. It is to say 'he *would* do that'. (92-93)

Ryle proposed that the folk construe beliefs as syndromes of dispositions to act, react, think and feel as if the world were some way. To believe Soylent is delicious is to be disposed to say 'I love the taste of Soylent', think 'mmm mmm mmm Soylent', imagine Soylent when hungry, fetch Soylent gluttonously, feel gustatorily satisfied upon drinking Soylent, and so on. Thus, Ryle suggested that when we offer explanations like "Patrick fetched Soylent because he believes Soylent is delicious", we do not mean that Patrick's belief produced his strides towards the fridge. Instead, we mean "Patrick, being the sort of dude who says 'I love the taste of Soylent, thinks 'mmm mmm mmm Soylent', and so on, is also the sort of dude who fetches Soylent in this context".

At first glance, this explanation of Patrick's behavior might appear stunningly uninformative. However, this apparent lack of informativeness can be put down to the fact that we already know that Patrick is a Soylent-drinking sort of dude. We would not seek an explanation for Patrick's Soylent-fetching behavior in the first place. However, if we witnessed celebrity deep-frier Paula Deen walking to the fridge to fetch Soylent, then we might demand an explanation. The explanation that Deen is the sort of lady who talks favorably about, thinks fondly of, and walks fervently to the fridge to fetch Soylent would be informative. As Ryle stressed, people use belief attribution to understand believers. Learning that Deen has a positively-valanced belief about the gustatory quality of Soylent is a revelation about her lived experience. (Compare the explanation that Deen believes Soylent is delicious with the explanation that Deen mistakenly believes the Soylent bottle to be filled with milk.)

Fast-forward sixty years. Patrick suffers from Alzheimer's. Rosa Labs (the manufacturer

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[25] Ryle: "roughly, 'believe' is of the same family as motive words" (1949: 134).

of Soylent) went out of business years ago. Patrick's granddaughter visits the nursing home, and observes Patrick rooting around in the fridge. She asks him what he is looking for; he answers that he wants to drink some Soylent. Patrick's granddaughter aptly explains his behavior by attributing the (false) belief that there is Soylent in the fridge. This explanation is informative because it contextualizes Patrick's odd behavior: he behaves as if Soylent is in the fridge *because* he believes there is Soylent in the fridge, and he believes there is Soylent in the fridge *because* he is in the grip of Alzheimer's disease. These 'becauses' give reasons: they place Patrick's behavior in the context of his belief, and place Patrick's belief in the context of his disease.

Davidson would not disagree. He allowed that

> when we ask why someone acted as he did, we want to be provided with an interpretation. His behavior seems strange, alien, outré, pointless, out of character, disconnected; or perhaps we cannot even recognize an action in it. When we learn his reason, we have an interpretation, a new description of what he did, which fits it into a familiar picture. (1963: 9-10)

So far so good. Davidson's worry was that Ryle failed to account for the mysterious connection between actions and the primary reasons that uniquely explain those actions. In Davidson's words, "we are left without an analysis of the 'because' in 'He did it because …', where we go on to name a reason" (1963: 11). Davidson insisted that the only viable interpretation of the 'because' in belief explanations implies that beliefs are (or invoke) inner causes that produce behavior.

How can a Rylean make sense of the mysterious connection, without understanding belief explanations to invoke inner causes? In true Rylean fashion: by denying that the connection is at all mysterious. According to Ryle, the 'because' in belief explanations is the 'because' of 'the glass broke when the stone hit it, because it was brittle', rather than the 'because' of 'the glass broke because a stone hit it'. In other words, rather than analyzing the 'because' as invoking producing causes, Ryle analyzed the 'because' as invoking patterns of dispositions, including the disposition to behave in the manner being explained. For Ryle, the so-called mysterious connection is just this: an intentional behavior is the manifestation of (one or more of) the dispositions that constitute the belief that explains that behavior.

Advocates of Davidson's dogma will not yet be satisfied. Patrick's behavior is a manifestation of dispositions that partly constitute each of his beliefs that Soylent is delicious, nutritious, and filling. But when Patrick is hungry, only his belief that Soylent is filling actually motivates him to get off the couch. In this scenario, the mysterious connection is between Patrick fetching Soylent and his belief that Soylent is filling. If, with Ryle, we deny Davidson's dogma that the folk construe beliefs as inner causes, then it can seem mysterious why people construe Patrick's behavior to be a manifestation of his belief that Soylent is filling rather than a manifestation of his belief that Soylent is delicious.

However, this connection only seems mysterious because Patrick's behavior is underdescribed. The action to be explained by appeal to belief is Patrick *hungrily* walking to the fridge to fetch Soylent, as opposed to *gluttonously* walking to the fridge to fetch Soylent. Once described richly enough, Patrick's action emerges as the manifestation of a disposition that partly constitutes all and only those beliefs that uniquely explain his action. Indeed, the explanation

'Patrick fetched Soylent because he believes Soylent to be filling' functions by differentiating hungrily walking to the fridge from gluttonously walking to the fridge. These are distinct actions, even if they are "photographically and gramophonically as similar as you please" (Ryle 1949: 140). When seeking an explanation of an action in terms of a primary reason, people seek a richer understanding of the action itself, as well as an insight into the mental profile of the actor. On Ryle's view, the belief for which somebody acts is the pattern of thoughts, feelings, actions, and reactions that uniquely rationalizes why *this person* would perform *this action*, under *this rich description*, in *this situation*.

Whether or not this captures how the folk actually construe beliefs, Ryle provided a viable analysis of the 'because' in belief explanations. The 'because' might point at a dispositional profile, rather than (directly or indirectly) towards an inner cause. Therefore, Davidson's second premise is false: beliefs can uniquely explain actions without being construed as causally producing them. Indeed, as we have seen, psychological evidence supports Ryle's analysis over Davidson's. Research on mindreading suggests that explicit belief attribution ties together the behavioral dispositions tracked by low-level mindreaders. Research on behavior explanation suggests that mindreaders attribute beliefs to provide reasons (as counterfactual dependence causes) for actions. None of this research suggests that the folk also construe beliefs as inner causes. The belief attributor seeks to understand what people are like, not as the cognitive neuroscientist seeks to understand the patient in the fMRI, but as the priest seeks to understand the parishioner in the pew.

6. Conclusion

I have argued that Davidson's influential argument for his dogma is unsound; in addition to construing beliefs as inner causes, there is at least one other principled way—the Rylean way—of accounting for the supposedly mysterious connection between actions and the beliefs that explain those actions. I hasten to add, however, that I have not shown that Davidson's conclusion is false. The folk might obliquely invoke producing causes whenever they attribute beliefs to explain behavior. Even on Ryle's account of lay belief explanation, the attribution of belief encompasses the attribution of dispositions to have thoughts and feelings. The manifestation of those dispositions may constitute producing causes of actions, and invoking these producing causes may be what renders belief explanations uniquely satisfactory. For example, Patrick's belief that Soylent is tasty is partly constituted by his disposition to feel an urge to taste Soylent. In order to successfully explain Patrick's Soylent-fetching behavior, mindreaders might have to obliquely invoke the manifestation of this urge as a producing cause. In other words, either Davidson's nuanced view or even Davidson's dogma might be true, even though his argument is unsound.

Nevertheless, I leave the reader with three facts. First, the debate in action theory is vexed and ongoing (the Davidsonian assumptions of most philosophers of mind and psychologists notwithstanding). Second, mindreading research and attribution theory have, to date, provided no empirical evidence that the folk construe beliefs as inner causes. Third, evidence provided by psychologists such as Apperly, Malle, Wellman and Lombrozo accords well with Ryleanism, and less well with Davidson's dogma, given that the latter posits an additional, unsubstantiated dimension to the folk construal of belief.

On Ryle's view, people attribute beliefs every day in order to provide teleological explanations of actions and insights into the personalities of actors, not in order to provide mechanistic explanations of behaviors. The evidence adduced in this article forms an empirical framework in which Ryle's hypothesis is well-founded. Both philosophers and psychologists need to do more work to determine whether it is not only well-founded but true.

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