A Phenomenological Contribution to Social Cognition:

Empathy as Mindreading

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LAY ABSTRACT:

In this thesis I reveal the implicit, baseline assumption made by scientists and philosophers in the mindreading literature that *observing behaviour* is a necessary condition for understanding the mental life of other people. I then argue that this assumption is erroneous by showcasing how we sometimes understand the metal life of others without observing behaviour. If observing behaviour is not a true necessary condition for understanding the metal life of others, then, what is? I present Edith Stein's account of empathy and suggest that it is a necessary condition for mindreading. The basic argument for this starts with the fact that we cannot successfully understand the mental life of others without eventually thinking consciously about them in some way at some point. When we do think of them, empathy—as Stein presents it—is present. Therefore, empathy is a necessary condition for understanding the mental life of others.

ABSTRACT:

Mindreading is one popular account of social cognition which suggests that we generally understand others by attributing mental states like thoughts, beliefs, desires, etc. to them. Accordingly, this thesis accomplishes three things. First, it reveals how the mindreading literature bears the implicit but erroneous assumption that *observing behaviour* is somehow necessary for mindreading processes. Second, after showing how this assumption is false, it argues that Edith Stein's phenomenological account of empathy offers a true necessary—and as is later argued, also sufficient—condition for mindreading. This means that we cannot successfully attribute mental states to others without enduring empathy at some point throughout the process; and that we may do this with empathy alone. Third, it positions this argument as an explicit attempt to promote phenomenology as a relevant and important discipline for the philosophy of mind, cognitive science, and psychology in general. To accomplish everything mentioned, I start by presenting and comparing the 4E theories of cognition in chapter one. Later in this chapter, I briefly reveal how phenomenology has influenced the development of these 4E theories. In chapter two, I lean on these findings to present and compare how the Theory Theory and Simulation Theory accounts of social cognition compare to phenomenological approaches. Finally, in chapter three I argue that combining 4E and phenomenological approaches to studying social cognition can offer a more fruitful account of mindreading versus the standard accounts alone. Whereas studying social cognition is typically considered to be a task for scientists and philosophers of mind, I argue that Edith Stein's concept of empathy can contribute to these efforts by providing a robust necessary and sufficient condition for mindreading to occur. Moreover, this provides one clear example of how phenomenology can support research in cognitive science, psychology, and philosophy of mind in general.

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Introduction

This thesis is motivated by the observation that in some cases, the mental states of my interlocutor seem explicitly clear to me despite the fact that in these moments I have not observed any behaviour or heard enough language to justify attributing these mental states to them. With this in mind amidst my research, I was increasingly frustrated that this problem was not being clearly recognised in contemporary philosophy of mind and cognitive science. Ultimately, I realized that this was because most accounts of mindreading explain social cognition by starting at the point where we observe another's behaviour. In other words, these disciplines were not equipped to start addressing the problem behind my initial observation because they operated on an implicit and erroneous assumption that immediately discredits it.

In this thesis I develop an approach to reifying this initial observation and others like it that sits between the 4E, phenomenological, and social cognition literature. I argue that Edith Stein's phenomenological account of empathy offers a strong foundation for supporting a new theory of social cognition. Specifically, I argue that the experience of empathy as Stein describes it is both a necessary and sufficient condition for mindreading to occur, and that this phenomenological approach offers a stronger alternative to popular accounts of mindreading which operate on the erroneous assumption mentioned above. To accept this, one must move away from classical cognitivism to embrace 4E thought and a phenomenological approach to the philosophy of mind and social cognition specifically.

In chapter one, I explain what 4E is and how it has already proven itself as a powerful paradigm for studying cognition: The four E's represent extended, embodied, embedded, and enactive approaches to cognition. Although each approach differs slightly such that some may argue that they cannot all be reconciled, they are nonetheless all united into one research programme by the mutual belief that cognitive activity exists beyond the confines of brain and skull. Moreover, it is important to note that the 4E programme initially emerged in the

philosophy of mind, despite this term not being adopted by various scholars before roughly 2006. However, its natural influence on cognitive science means that cognitive science, psychology, and other closely related disciplines quickly became permanent residents of the literature. In this thesis, I am contributing to the philosophical side of these conversations. But to do this in good faith, I should and certainly do engage with the scientific literature as well. I end this chapter by underscoring the relevance that phenomenology has for supporting 4E research. To help with this, I reference Shaun Gallagher and Dan Zahavi's project introduced in their book *The Phenomenological Mind* of incorporating phenomenology into philosophy of mind and cognitive science. I ultimately support and contribute to this project by demonstrating how phenomenology can contribute to the social cognition and mindreading literature specifically.

In chapter two, I compare 4E and phenomenological approaches to social cognition. I start with the Theory Theory account of mindreading, which is a primitive account of mindreading that is not truly embraced by 4E thought, but nonetheless helps inform the move away from it in a nontrivial way such that we cannot discuss its successor and opponent without mentioning it first. Accordingly, in the next section I present Simulation Theory as a distinctly 4E-capable theory of mindreading and explain how this is the case. Finally, on the phenomenological front, I explain the problem of empathy as introduced by Edith Stein. This involves an initial discussion of intentionality and its relationship to intersubjectivity, as the problem of empathy emerges when intentionality is oriented towards humans, according to Stein. Up to this point, the thesis is largely exegetical. However, along the way I do inject my own ideas and smaller arguments to support theories and concepts which are stronger, more convincing, or otherwise favorable.

Chapter three ultimately accomplishes four things. Notably, it is where I introduce the argument that standard approaches to social cognition are flawed, and that an empathy-based

account of mindreading is a superior alternative because of its ability to explain social cognition without committing to that flaw. In short, the flaw is that standard views of social cognition operate on the erroneous and implicit assumption that mindreading is not possible without first observing some kind of behaviour, which we ultimately attribute mental states in response to.

The first thing this chapter does is provide two reasons for why it is beneficial to incorporate phenomenology into the philosophy of mind and cognitive science literature more generally. The second thing it does is reveal the implicit assumption of observed behaviour just mentioned in greater detail, which standard accounts of social cognition implicitly hold. The third thing it does is develop the empathy-based account of mindreading according to Edith Stein's phenomenological account of empathy and argue that it is a stronger account of mindreading—partly because it does not hold the assumption about observed behaviour. Finally, it ends by considering two objections to the empathy-based account of mindreading presented, and I respond to them both.

Chapter 1: What are 4E theories?

This chapter presents an exegetical account of 4E cognition—the theory that minds are extended, embodied, embedded, and enactive (hence the 4Es)—and then argues that phenomenology has merit to meaningfully contribute to 4E research. I will summarise each of the four Es in this order between §1.1–1.4. Although each E implies something slightly different about cognition, they are all united by the idea that cognitive phenomena exist beyond the boundaries of brain and skull. Accordingly, some authors like Larry Shapiro prefer to call to the entire field "*a research programme*, rather than a *theory*".[1] As we will see by the end of §1.3, the various differences between all elements of 4E research are different enough such that they cannot all be combined together, despite sharing key baseline principles and assumptions about studying cognition.

In §1.1 I summarise the formative literature around extended cognition. Included in this account is a distinction between the three 'waves' of the extended mind hypothesis, appearing between §1.1.1–§1.1.3 respectively. §1.2 is about embodied cognition, with another distinction here between weak and strong embodiment—§1.2.1 and §1.2.2 accordingly. §1.3 regards enacted cognition, and §1.4, embedded cognition.

At the outset, the 4E programme can be understood as a response to classical cognitivism (CC): The historically dominant idea that cognitive processes are computational and native to the brain. Therefore, 4E cognition is a contemporary programme in the philosophy of mind which supersedes the belief that brains are privileged in hosting cognitive processes. Instead, cognition and cognitive processes essentially thought of as including our bodies, our environment, and the interactions between them according to the 4E programme. Naturally, 4E cognition is closely related to research in cognitive science: Cognitive scientists

[1] Shapiro, 'The Embodied Cognition Research Programme.'

who are on board with the 4E approach to cognition will ultimately approach their scientific research differently than their CC colleagues. Throughout this thesis and in this chapter specifically, then, I am largely engaging with the philosophy of mind literature. In some places throughout this chapter—and especially in chapter two—arguments made by philosophers of mind hinge on research conducted in the strict cognitive sciences. Accordingly, I will engage with this research too when it is relevant. Therefore, although I am primarily engaging with the philosophy of mind, supporting research from cognitive science is relatively common and will not be foreign to this thesis in general.

The term '4E cognition' itself does not have a clear origin. Some have claimed that the term was first used at a 4E cognition conference hosted by Shaun Gallagher in 2007. Another account traces back to an 'Embodied mind workshop' held at Cardiff University in 2006, which Gallagher also attended. But both accounts still imply that the term is relatively new in the literature, especially compared to the age of cognitive science in general. As different philosophers and scientists continued to explore the cardinal idea of extended cognition using various approaches, general features remained the same such that they could all fit under the umbrella term of '4E'.

In §1.5 I underscore the influence that phenomenology has had on 4E research and contemporary philosophy of mind more generally. I do this by supporting the project introduced by Shaun Gallagher and Dan Zahavi's in their book *The Phenomenological Mind* [2] of reviving phenomenology through its incorporation into philosophy of mind research. As we will later see in more detail, Gallagher and Zahavi argue that following the decline of phenomenological interest in the twentieth century, a modern revival of the discipline is possible by incorporating phenomenological concepts, terms, ideas, and methodologies into the philosophy of mind discourse. Specifically, I support their project by suggesting the

[2] Gallagher and Zahavi, The Phenomenological Mind.

phenomenological studies of intersubjectivity and empathy are compatible with 4E accounts of social cognition. The goal here is to convince the reader that phenomenology is an important topic for contemporary debates about social cognition,[3] before diving into social cognition in more detail next chapter.

1.1. Extended cognition

There is no single, clear line through the conceptual history of extended cognition. Shaun Gallagher thinks that we can find a prefiguring for the topic within American pragmatists like Charles Sanders Peirce and John Dewey.[4] To support this claim, he provides two informative quotes which are, in retrospect, characteristic of contemporary 4E thinking. In one case, Peirce wants to say that his inkstand is a real part of his thinking apparatus.

> A psychologist cuts out a lobe of my brain. . . and then, when I find I cannot express myself, he says, "You see, your faculty of language was localized in that lobe." No doubt it was; and so, if he had filched my inkstand, I should not have been able to continue my discussion until I had got another. Yea, the very thoughts would not come to me. So my faculty of discussion is equally localized in my inkstand.[5]

Further, Dewey seems to think that our brain processes, our bodies, and our environments are also all real parts of the thinking process.

> Hands and feet, apparatus and appliances of all kinds are as much a part of [thinking] as changes in the brain. Since these physical operations (including the cerebral events) and equipments are a part of thinking, thinking is mental,

[3] Gallagher, Phenomenology.
[4] Gallagher, Embodied and Enactive Approaches to Cognition.
[5] Peirce and Burks, 'Collected Papers of Charles Sanders Peirce.' 7/8 / Ed. by Arthur W. Burks, 366.

> not because of a peculiar stuff which enters into it or of peculiar non-natural activities which constitute it, but because of what physical acts and appliances do: The distinctive purpose for which they are employed and the distinctive results which they accomplish.[6]

By 'contemporary 4E thinking' I refer to the numerous discussions that spawned in response to Chalmers and Clark in their *Extended Mind* paper, and to the numerous discussions that are not directly related to this paper but ultimately happened because of the ideas that propagated from it. In other words, not every discussion in the 4E literature is essentially a response to Clark and Chalmers—many discussions today are parallel to the extended mind approach but still think about cognition differently. Again, however, those discussions which share key features such as accepting that cognition occurs outside of the brain and skull are what myself and others consider 4E thought. To simplify this diversity, I start by considering the initial conversations that emerged from Chalmers and Clark. These developed into the first theoretical 'wave' of the extended mind hypothesis. There are three distinct 'waves' in question, and we must start with Chalmers and Clark's paper first.

1.1.1. The first wave

In 1998, Chalmers and Clark argued that our environment and our interactions with the entities in it plays an active role in driving cognitive processes such as recognition and search.[7] The distinctive move away from CC comes from suggesting that in some cases, humans become linked with an external entity in their environment to create a *coupled system* of cognition. Coupled systems are two-way interactions—in this case, between the human and the entity in her environment—that can be understood "as a cognitive system in its own

[6] Dewey, Essays in Experimental Logic, 8-9.
[7] Clark and Chalmers, 'The Extended Mind', Analysis 58, no. 1 (1998): 7–19

right.[8] Each variable in the cognitive apparatus of a coupled system reacts to the activity of the other, which in turn affects the original variable again, and so forth. Chalmers and Clark use the example of someone playing Tetris, where the player and the computer/monitor running the game are the two variables in a coupled system. The player reacts to a shape that appears on their screen by pressing a button, which in turn causes the shape on the screen to rotate. After the shape 'reacts' to the player (by rotating on the screen), the player reassesses the new situation, makes another decision, and so forth. Some other cases that are also coupled systems include: A hockey player and his stick; a driver and their car. In each case, one variable in this system reacts to the behaviour of the other which in turn produces a reaction in the other, and so forth.

In this paper Chalmers and Clark are reassessing the line(s) between where the mind ends and the world begins. Coupled systems start to bridge that gap. However, the hypothetical case of Otto reveals a strong claim: That some elements of our environment can be a fundamental part of our cognitive system. Otto suffers from Alzheimer's, disease, which results in his inability to remember important things like directions, people, places, etc.[9] In lieu of this loss, Otto uses a notebook as an external memory aid to account for everything important he needs to know, like directions, people, places, etc. If someone without Alzheimer's wants to visit their local café, for example, then they may recall the directions by memory. If Otto wanted to do this, however, he would instead consult his notebook for directions. But in either case, Otto is using a reliable and accessible means for retrieving information. From this, authors suggest that Otto's notebook is functionally similar to biological memory. Therefore, Chalmers and Clark argue that an external process—such as Otto checking his notebook—can be considered part of our cognitive system if it performs a

[8] Ibid.
[9] Ibid.

function that would undoubtedly be considered 'cognitive' if done by the brain instead. This idea that we can include eligible external processes as part of our cognition is called the *parity principle*. Therefore, Otto's notebook can be considered part of Otto's mind because it can functionally play the role of something that is typically played by neuronal structures. Namely, the medial temporal structure (a critical region in the brain that is largely responsible for memory).

1.1.2. The second wave

The second wave of the extended mind hypothesis initially emerges from disagreement about the parity principle. In short, critics viewed the parity principle as hiding the implicit assumption that we can call something cognitive so long as it is an internal process.[10] In the case of Otto, for example, using the notebook cannot be called cognitive because it is not obviously an internal process: Using the notebook is something that happens externally, merely in support of the internal process of memory. For some theorists like John Sutton,[11] this is not problematic insofar as it is true that internal and external processes are functionally similar sometimes—accessing information within my brain about my friend's birthday serves the same purpose as accessing that same information from a notebook. Denying the parity principle is therefore a matter of recognising that there are instances in which there are significant differences between internal and external processes. Therefore, Sutton defends *complementarity*, in contrast to parity. The key idea here is that "different components of the overall (enduring or temporary) system can play quite different [functional] roles and have different properties while coupling in collective and complementary contributions to flexible thinking and acting."[12] In other words, certain components within a coupled cognitive system

[10] Gallagher, 'Embodied and Enactive Approaches to Cognition,' 22.
[11] Sutton, 'Exograms and Interdisciplinarity.'
[12] Ibid, 194.

sometimes look and function quite differently from other components, but nonetheless they still all function together to contribute to thinking and acting, i.e. cognitive tasks. This idea allows us to admit something intuitive: That agents use various internal and external processes in varying combinations and degrees for many tasks. Further, these proportions might change from day to day or even according to different situations. Further again, all these variables might look different between different people. Let us consider all of this in the case of doing mathematics. Mathematical thinking is an internal process for the person doing it, but two relevant external processes are using a calculator and writing with a pen on paper. Some days, you might rely on a calculator more than others—or maybe the difference is due to whether you've had coffee. When you happen to be writing a test, however, you are not allowed to use the calculator such that your degree of *using a calculator* is zero and your degree of *writing* (external) and *thinking* (internal) is much higher. Further, your reliance on these external processes—the calculator and writing—in general might be greater or lesser than your classmate's. The coupled system here involves your pen, paper, calculator, and reasoning abilities. In different scenarios, however, you use these variables differently. Ultimately, complementarity offers greater explanatory power and overcomes difficulties in explaining certain extended-cognitive tasks versus parity.

Another key theme of the second wave is integration. Integration is predicated on *active* coupling, rather than the primitive notion of coupling introduced by the first wave. Active coupling suggests that our body-world interactions can shape our brains, rather than merely provide a means for cognitive offloading. Active coupling is similar to mere coupling in that we are actively using our bodies to manipulate the world and interact with the props in it to create a coupled system between brain, body, and world. However, active coupling adds to this picture by emphasising that these connections are reciprocal and causal such that we learn to act and think in normative ways through our engagement in coupled systems.

Mathematics, again, is a good example of this. The numbers, graphs, charts, maps, etc. native to mathematics are developed according to certain norms which are culturally established. For instance, the numbers we use, the standard procedures of putting the X-axis horizontally, the conventional legends we use to read maps, etc. In these cases, we use our bodies in specific ways to manipulate computers, special arrangements pen and papers, etc, and as Gallagher writes, this kind of integration involves "not a simple offloading or scaffolding that simplifies cognition, but a transformation of cognitive processes such that we can think and act in new ways through such engagements."[13] Another example is language and writing:

> Stable and enduring external written sentences allow for manipulation, transformations, reorderings, comparisons, and deletions of text that are not available to neural processes. This is the upshot of second-wave cognitive-integration-style arguments: bodily manipulations of external vehicles are different from, but complementary to, internal processes.[14]

Notably, in such cases, our engagement with certain props and tools in our environment mediate plastic changes in our brains that endure over an evolutionary or development timeframe.[15]

Finally, these communicative practices lead to the idea of the *socially* extended mind in the second wave. Clark and Chalmers anticipated such an idea by suggesting that "my mental states might be partly constituted by the mental states of other thinkers [such that] one's beliefs might be embodied in one's secretary, one's accountant, or one's collaborator."[16] However, Gallagher thinks the idea of a socially extended mind goes further

[13] Gallagher, 'Embodied and Enactive Approaches to Cognition,' 23.
[14] Menary, 'Cognitive Integration and the Extended Mind', 240.
[15] Cf. Gallagher, Embodied and Enactive Approaches to Cognition, 23, and Malafouris, How Things Shape the Mind.
[16] Clark and Chalmers, 'The Extended Mind', 17.

than this. He suggests that such practices allow for the establishment of mental or cognitive institutions.[17] These institutions—such as academic, scientific, legal, or cultural institutions—can be used to enable cognition and define cognitive achievement. It seems that even our ability to classify these waves of extended cognition—to talk about them between authors and publications, and to reason with them with mind and pen—are exactly the type of accomplishment and social establishment that Gallagher suggests is enabled with the socially extended mind.

1.1.3. The third wave, and on

As of 2023, the third wave is arguably still under formation. Michael Kirchhoff[18] and Mason Cash[19] seem to be in relatively close agreement suggesting that the third wave takes off with the establishment and development of the socially extended mind. Others[20] disagree, suggesting that the socially extended mind started the fourth wave such that the third wave started earlier. The point is that our counting is arguably arbitrary now. However, the first two waves are faced with the same concern: How ought cognitive science be conducted if on top of neurons, it now seems that we must study iPhones, the law, notebooks, mathematics, etc? Clark's 2016 work on connecting predictive processing (PP) and extended mind begins offering a way to rectify these concerns such that cognitive science can integrate all these factors into a single, unified model.[21] In short, PP starts with the assumption that perception is an inferential process, and recent work is concerned with using modern theoretical advancements in PP to reify that explanatory problem of the extended mind. For the purposes of this thesis, however, an introduction to this idea—that there is an explanatory problem

[17] Gallagher, 'The Socially Extended Mind', 4–12.
[18] Kirchhoff, 'Extended Cognition and Fixed Properties.'
[19] Cash, 'Cognition without Borders.'
[20] Fritzman and Thornburg, 'I Is Someone Else.'
[21] Clark, Surfing Uncertainty.

with extended minds—is enough to situate us firmly into the conversation. As we will see in §1.5 and then in chapter three, phenomenology can help solve this problem despite this being a nascent approach.

1.2. Embodied cognition

Embodied cognition is concerned with the first proximal place that our minds can extend to: The body. In short, embodied approaches to cognition consider how our physical bodies shape, influence, and contribute to both the process and content of cognition.[22] Stronger accounts of embodiment suggest that cognition is not merely *involved with* but *grounded in* our bodily experiences and our interactions with the environment. Further, because all our sensory experiences are mediated by sense organs ultimately found in our bodies, all sensory experiences can be reduced to bodily terms. Therefore, sensory experiences—mediated by our bodies—shape the way we perceive and understand the world. For instance, people with certain types of colorblindness may not perceive the specific shade of maroon that an artist intentionally uses in her paintings, resulting in the lack of a particular emotional response which the artist intended to invoke. In this case, the observer's inability to perceive the correct shade of red in the painting prevented him from a experiencing a particular emotional response. If his body was different—by having healthy red cones in his eyes— then he would be able to see the maroon in the painting and reacted differently, with a different emotion. So, as embodiment suggests, if at least some of our sensory experiences are inexorably dependent on the constitution of our bodies, then we should include our bodies as part of our cognitive apparatus.

[22] Gallagher, 'Embodied and Enactive Approaches to Cognition.'

1.2.1. Weak embodied cognition

Adrian Alsmith and Frederique de Vignemont have distinguished between a "weak" and a "strong" notion of embodiment.[23] The weak camp still considers our brains to be the only place where all the real and relevant activity we want to call 'cognition' takes place. However, weak embodiment still recognizes our bodies as playing a significant role in explaining how cognition works. In other words, weak embodiment suggests that our bodies—including its "anatomical, postural, kinetic, and more general physical features"[24]—are explanatory factors but not constitutive parts of cognitive processes. Later we will see how strong embodiment suggests that our bodies are a part of them.

Is weak embodiment compatible with CC? We have seen how extended cognition is not: It accepts that external entities like a notebook can be part of our cognitive apparatus, such that we have escaped the skull-brain boundary to talk about cognition. Weak embodiment, however, is mostly still compatible with CC frameworks. For Alvin Goldman, this is because of its reliance on body-formatted (B-formatted) representations for explaining the body's role in cognition[25], which exist in the brain. To understand what B-formatted representations are, we should first understand what regular representations are. Representations have to do with our commonsense understanding of mental states, such as beliefs, desires, thoughts, and imaging.[26] Such mental states are distinct in that they are all said to be *about* something, and this aboutness is referred to as "intentionality".[27] (The concept of intentionality will be revisited in greater detail in later chapters). For example, the belief that your car is in the last place you parked it is *about* your car and your driveway; the

[23] Alsmith, and De Vignemont, 'Embodying the Mind and Representing the Body'. Review of Philosophy and Psychology 3, no. 1 (March 2012): 1–13.
[24] Gallagher, "Embodied and Enactive Approaches to Cognition," 23.
[25] Goldman, Alvin I. 'A Moderate Approach to Embodied Cognitive Science'. Review of Philosophy and Psychology 3, no. 1 (March 2012): 71–88.
[26] N. Zalta, Edward, and Nodelman. 'Mental Representation'. In The Stanford Encyclopedia of Philosophy, n.d.
[27] Ibid.

desire for an ice cream sandwich is *about* an ice cream sandwich or a potential one, etc. Importantly, mental states can be evaluated according to certain standards like appropriateness, accuracy, truthfulness, etc. For example, the thought that you should not eat your meal until everyone at the table has been served theirs is appropriate, the imaging of a Persian cat with a squished face is accurate, and the thought that King Charles III is currently the King of the United Kingdom is true. Importantly, all representations are said to exist within the brain.[28] In all these cases, when you hold a mental state about something in the world, you bear a representation about that thing. In classical cognitive science, representations stand in for something in the world, like a surrogate within a computational process.[29]

So, then what are B-formatted representations exactly? Although the general idea of representational formats is common within cognitive science, Goldman[30] admits that it is still not clear what exactly a format is. However, one key finding that informs Goldman's understanding of B-formatted representations is that neural circuits used for bodily movement and recognition in general are tacitly in use when performing tasks that are not directly related to the perceiver's own body.[31] In other words, when we perform tasks which are far removed for our own bodies—such as estimating the properties of an environment in the distance—we are employing certain neural circuits which are also in use when performing tasks that are directly related to our own bodies. These findings, initially found by Denniss Profitt and various colleagues in a collection of experiments, are expounded by Goldman in support of a new thesis that applies these findings to embodied cognition. But first, here are

[28] Gallagher, 'Embodied and Enactive Approaches to Cognition.'
[29] Ibid. This latter concept will be revisited in §1.4.
[30] Goldman, Alvin I. 'A Moderate Approach to Embodied Cognitive Science'. Review of Philosophy and Psychology 3, no. 1 (March 2012): 71–88.
[31] For more on neural reuse, see Michael Anderson's work. Notably: Anderson, M. L. 'Evolution of cognitive function via redeployment of brain areas.' The Neuroscientist, no. 13 (2007a): 13-21. As well as: Anderson, M. L. 'Massive redeployment, exaptation, and the functional integration of cognitive operations.' Synthese. 159(3 (2007b)): 329-345.

three of Proffitt's principal findings with respect to the body's role in visual perception, specifically:

1) Visual representations of a target objects size are scale to reflect one's own bodily parts. In a 2010 experiment, Linkenauger, Ramenzoni, and Proffitt gave participants googles to wear which either minified or magnified a target object. In both cases, when the participant placed their hand next to the minified or magnified object, it would appear to shrink or grow to a near-normal size according to which googles they were wearing. In other words, objects appeared to grow or shrink in response to the visual comparison between the distorted image and their normal hand.[32]

2) Visual estimations of an environment's features—such as distance or steepness—are influence by our body's physiological states. In 1999, Bhalla and Proffitt conducted four studies that demonstrated a patterned error in judgement according to a subject's hindered physical states: Hills were judged to be steeper than they were when the subjects were fatigued, unfit physically, elderly, and declining in health; judgements of a hill's precise slant level were overestimated when subjects wore weighted backpacks; and overall fitness levels in participants negatively correlated with how steep the hills were estimated to be.[33]

3) Distance judgements specifically are affected by how much required effort is required for a certain task. Witt and Proffitt in 2008 asked participants to either walk towards a target point or throw a beanbag at the same point. In both cases, the estimation of how far away the target point was influenced by the effort required to throw or walk there. Some points were further, and some were closer.[34]

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[32] Sally A. Linkenauger et al. 'Illusory Shrinkage and Growth: Body-Based Rescaling Affects the Perception of Size,' Psychological Science 21, no. 9 (2010): 1318–25.
[33] Mukul Bhalla and Dennis R. Proffitt, 'Visual–Motor Recalibration in Geographical Slant Perception.' Journal of Experimental Psychology: Human Perception and Performance 25, no. 4 (1999): 1076–96.
[34] Jessica K. Witt and Dennis R. Proffitt, 'Action-Specific Influences on Distance Perception: A Role for Motor Simulation.' Journal of Experimental Psychology*:* Human Perception and Performance 34, no. 6 (2008): 1479–92.

In short, Proffitt and colleagues are taken to be saying that representations of our own bodies and its parts are commonly influencing our representations of non-bodily objects. And further, Goldman advances this idea by applying these principal findings to form the thesis that "one's own body is used to scale physical judgments about other (non-bodily) subject matters."[35]

Moreover, one distinct feature of B-formatted representations is that they are non-propositional. This contrasts mental representations, which are classically thought of as being propositional. That is, they are "language-like" and contain a proposition.[36] Consider some of the previous examples of mental representations again: The belief about where your car is holds the proposition that your car is in your driveway, for example. B-formatted representations instead "represent states of the subject's own body … from an internal perspective."[37] Consider the act of changing your body's position while lying in bed: Although there is no clear proposition which characterizes that movement, we might say that you had a B-formatted representation of your body at that moment that can be translated into 'being in a bad posture for prolonged sleeping'. Notably, this proposition is just a translation of a B-formatted representation: The B-formatted representation is supposed to be non-propositional; at that moment, the state of your body itself represents something to your mind, and this representation of the state of your body is more like a sensation than a proposition. Moreover, you can translate sensations into propositions, but the point being illustrated here is that crude B-formatted representations are inherently non-propositional. Therefore, weak embodied cognition maintains that the body is a peripheral component of the brain's information processing system, and that the body's main purpose in this system is to

[35] Goldman, Alvin I. 'A Moderate Approach to Embodied Cognitive Science'. Review of Philosophy and Psychology 3, no. 1 (March 2012): 71–88. 12.
[36] Gallagher, 'Embodied and Enactive Approaches to Cognition.'
[37] Goldman, Alvin I. 'A Moderate Approach to Embodied Cognitive Science'. Review of Philosophy and Psychology 3, no. 1 (March 2012): 71–88.

provide information in the form of B-formatted representations that the brain abstractly processes. Therefore, weak embodiment suggests that the body is not an extended part of cognition—it is peripheral at best—such that it is compatible with CC.

Strong embodied cognition might consider weak embodied cognition problematic based on its reasoning about B-formatted, and I would agree. There are two reasons why weak embodiment is problematic: First, weak embodied cognition is paradoxically a disembodied notion, considering that it does not want to include our body as part of the brain.[38] If we want to say that B-formatted representations exist exclusively in the brain as representations *about* the body, then there is no meaningful sense of embodiment here. As we saw according to the arguments above, B-formatted representations are strictly neural phenomena—that is, they occur and exist exclusively in the brain between neurons—despite its content being about the body. Therefore, the body is not considered part of the brain as it can only be represented by the brain.

Similarly, a second problem with weak embodied cognition is that one must separate the body from its environment to justify its conclusions. In other words, weak embodied cognition understands the body as an independent thing from its environment rather than being related to it. This is essentially a non-extended approach. For example, consider the case of shuffling in bed again. Using B-formatted representations to explain this scenario, weak embodiment might suggest that the brain causally represented the body as being in a state of bad posture before making the shuffle. At first pass, this seems unproblematic. However, if we assume that this description is sufficient as-is for the sake of explaining cognition, then we would be disregarding the point that the badly postured body reacted to its environment precisely because it bears a relation to it, in this case, the small and stiff mattress underneath it. Weak embodiment would consider this description sufficient because the B-

[38] Gallagher, 'Embodied and Enactive Approaches to Cognition.'

formatted representation and its content is entirely native to the brain such that there is no need to look beyond it (to the body). Therefore, taking weak embodiment seriously seems to imply that the mattress—a relevant part of the environment which the body is embedded in and reacts accordingly to—has nothing to do with how the brain behaves. However, because this B-formatted representation of a badly postured body necessarily emerges from a body lying on an uncomfortable mattress, then without the bad mattress, there is no bad posture, and without the bad posture, there is no B-formatted representation in the brain. The brain, body, and environment are therefore coupled in a meaningful way that weak embodied cognition seems to overlook.

1.2.2. Strong embodied cognition

Strong embodied instead argues that the body—its anatomical, postural, kinetic, and more general physical features—are nontrivial actors within our cognitive apparatus such that no intermediary (like the brain) is necessary for the body to contribute to cognitive processes. Our anatomy and bodily movement are not peripheral to the brain like weak embodiment suggests. Instead, strong embodied cognition suggests that cognitive experience is necessarily shaped by these general and specific features of the body.[39] Consider the fact that our human binocular vision is the direct result of having two eyes which are horizontally separated on two sides of our head.[40] Many other distinct features of human cognition can be described by similar observations: Our hearing, smelling, feeling, etc.

Strong embodied cognition moves away from weak embodied cognition in two meaningful ways. First, as was just briefly mentioned, the brain is no longer solely privileged in its ability to influence cognitive processes. Rather, the body shares this privilege. Experiments in cognitive science and psychology provide evidence for this conclusion. For

[39] Gallagher, How the Body Shapes the Mind.
[40] Gallagher, 'Embodied and Enactive Approaches to Cognition.'

example, in 2002 Glenberg and Kaschak instructed experimenters to read specific sentences and react to them by either pushing a button or pulling a lever.[41] In one case, a button was presented alongside the sentence "Close the drawer." Pushing a button involves moving away from one's body, while closing a drawer implies moving toward one's body. Therefore, this is an incongruent pairing. In another case, the same action-sentence "Close the drawer" was presented alongside a lever. Pulling a lever instead involves moving towards one's body and closing a drawer implies the same thing. Therefore, this is a congruent pairing. On average, the experimenters displayed a slower reaction time reacting to incongruent pairings than they did reacting to congruent pairings. The researchers coined this new phenomenon the *action-sentence compatibility effect* (ACE). It suggests that bodily movements and ways of posturing ourselves can affect the evaluations of target objects.[42] Further, if weak embodied cognition attempted to justify ACE without allowing the body to participate directly in cognitive processes—for instance, by explaining ACE with B-formatted representations—they would be forced to claim that this lag in reaction time is somehow entirely due to the function of our brains and nothing to do with our bodies. Therefore, the ability for strong embodied cognition to explain experiments like this is a relative strength versus the explanatory power of weak embodied cognition.

The second way strong embodied cognition moves away from weak embodied cognition is by rejecting B-formatted representations as a sufficient explanation of cognitive phenomenon. Specifically, of cognitive phenomena related to the body, like the 'shuffling in bed' example from earlier. Strong embodied cognition takes the body's extra-neural structural features (again, like the body's anatomy, posture, and general characteristics) to be directly involved in cognitive processes rather than being merely represented to the brain, like

[41] Glenberg, Arthur M., and Michael P. Kaschak. 'Grounding Language in Action'. Psychonomic Bulletin & Review 9, no. 3 (September 2002): 558–65.
[42] Gallagher, 'Embodied and Enactive Approaches to Cognition.'

B-formatted representations imply. To illustrate this difference between something being *merely represented by the brain* and being *directly involved in cognitive processes*, I suggest a comparison between thinking about the physical capabilities of a basketball player versus how you can think of your own physical capabilities, considering that you are not a basketball player.

You might have some propositional knowledge about a specific player: That they are six foot and seven inches tall, and that they are able to reach the basketball net to 'dunk' the ball around eighty percent of the time. Although you might have the same type of propositional knowledge about yourself—that you are five foot and eleven inches tall, and that you might never reach the basketball net—you also seem to have a special ability to assess this knowledge in practical situations which is not available when thinking about the basketball player. For example, now imagine that you are walking along a sidewalk which has a wall of concrete by your side that reaches up to your shoulders. Here, you might think to yourself, "I surely cannot make that jump." But can you be equally sure that the basketball player can or cannot make this jump? Putting aside the ability to compare the relative height of this wall to the basketball net, and answering this question based on your representations of the player's ability to reach a basketball net, you likely cannot answer this question with the same confidence you had when speaking for yourself. Why? Because your body is part of your cognitive system, which works together when assessing your capabilities, while the basketball player's body is not part of your cognitive system. Therefore, you cannot assess another person's ability in the same way you can assess your own because only your body is part of the cognitive system which develops these assessments about yourself. If our bodies were independent from our cognitive apparatus, then the type of information about your own body would be as equally accessible to your brain as the same type of information about another's body. Put differently, if the body is not an essential component of one's cognitive

apparatus such that B-formatted representations are all the brain uses to cognize about the body, then there is no categorical difference between your brain's representations about your own body and another's body. In this case, both representations would be body-formatted. My example above clearly demonstrates that this idea is at least intuitively problematic.

The insufficient explanatory power of B-formatted representations for certain cognitive phenomena, the unintuitive implications of weak embodiment, and the empirical supports for strong embodiment all converge to make a stronger case for strong embodied cognition than weak embodied cognition. The upshot of strong embodied cognition is therefore not simply, as Shapiro puts it, that cognitive processes fit bodily structure. But rather, that perceptual processes "*depend on and include* bodily structures."[43]

1.3. Embedded cognition

Embedded cognition suggests that the environment can shape and support cognitive processes. Whereas extended cognition emphasizes the idea of coupling—situations where an individual and her environment are dynamically linked to create a cognitive system in its own right—embedded cognition adds to this picture by saying something about the nature of this dynamic interaction. Namely, "that in some cases the environment scaffolds our cognitive processes, or that engagement with environmental features can shift cognitive load."[44]

Various accounts of embedded cognition make this claim by underscoring the fact that our cognitive functions are sometimes heavily reliant on props and devices in our environment. For example, some people often use phone applications to set reminders; we can also rely on a friend for directions (this example hinges on the fact that our environment includes the social sphere too). A less obvious example is this: I often rely on the cutting-edge performance of modern computer chips in my laptop to access important documents,

[43] Shapiro, 'The Mind Incarnate,' 190.
[44] Gallagher, 'Embodied and Enactive Approaches to Cognition.'

calculations, and critical information frequently and with virtually no lag, and I rely on the fact that this performance is consistent. Without these features in my environment that allows me to store things I do not always need, and to do the things that would be cognitively demanding by myself, I would life a different lifestyle altogether, and therefore, I would have a different cognitive character.

Consider how much more productive mathematicians became after the widespread invention of computers and calculators: Whereas mathematical progress was previously bottlenecked by the laborious and time-consuming task of conducting and verifying calculations, offloading this task onto a calculator not only allowed progress to speed up, but it also allowed mathematicians to use that time to think ahead about other things. Like Margaret Wilson says: "rather than attempt to mentally store and manipulate all the relevant details about a situation, we physically store and manipulate those details out in the world, in the very situation itself".[45]

That our environments influence our cognition in a formative and nontrivial way is related to the concept of cognitive niche construction, which comes from evolutionary biology. A cognitive agent's 'niche' is essentially the parts and features of their environment which can be manipulated, used, or otherwise interacted with in some meaningful way. The concept of niche construction is used to model evolution by emphasising the role that active agency plays in optimising the fit between an agent and their niche.[46] In other words, this model suggests that species and organisms increase their odds of survival by solving problems to modify their environments in such a way that the agent and their world develop an appropriate fit together. For humans, a lot of niche construction seems to serve epistemic ends. For example, we make cognitive tools to support and shape the way we process

[45] Wilson, 'Six Views of Embodied Cognition,' 629.
[46] Sterelny, Kim. 'Minds: Extended or Scaffolded?' Phenomenology and the Cognitive Sciences 9, no. 4 (December 2010): 465–81.

information. Consider the calculator example from earlier. A key philosophical message that emerges from this concept is that cognition is not unnoticeable, such that it happens in thin air. Or more abstractly, cognition is not in-the-head. Instead, cognition is noticeable, and we can find it in-the-world—like a phenomenologist might say.[47]

James Gibson's, influenced by phenomenology,[48] also seems to think that cognition happens in-the-world. His ecological approach to psychology starts outside the brain by considering how our environmental structure can play an enabling or constraining role for cognitive and action possibilities. This means that some environments might support the conduct of cognitive processes, and some environments may inhibit them. If you are a conscientious person, one example of an environmental support would be a tidy and organised room which allows you to easily access certain books or information that are periodically useful for you while writing. Similarly, an example of an environmental constraint for the same person might be a dirty and unorganised room which not only disrupts workflow by making the same books and documents inaccessible but also seem to negatively affect performance.[49]

Building on the ecological approach to psychology and cognition is the concept of affordances. Affordances are a type of information that the things in our environment provide us by merely being there—usually, a kind of information about what we can do with that thing or what we can do in that environment where the thing is. For example, the pen I see on my table affords the ability to write something with it. Seeing the pen is not the only significant perception in this case. Further, the wall of concrete from earlier affords itself as something you can or cannot jump over. As Gibson puts it: "The affordances of the environment are what it offers to the animal, what it provides or furnishes, either for good or

[47] Gallagher, 'Embodied and Enactive Approaches to Cognition.'
[48] For the case of 'affordances', Gibson was influenced by Merleau-Ponty's Phenomenology of Perception.
[49] Mateo, Ricardo, Jose Roberto Hernández, Carmen Jaca, and Szabolcs Blazsek. 'Effects of Tidy/Messy Work Environment on Human Accuracy'. Management Decision 51, no. 9 (11 November 2013): 1861–77.

ill."[50] This concept was also influenced by phenomenology, and as we will see in the upcoming section, plays an important role in shaping enactive approaches to cognition.

1.4. Enacted cognition

It is important to distinguish between perception and cognition to understand enacted cognition. As previous sections in this chapter have explained, each of the Es suggests something different about cognition. However, extended, embodied, and embedded approaches have all understood perception similarly. Enacted cognition suggests something different about perception. The latter three Es understands perception as a function for picking up on sensory information from the external world, ultimately, for our brains and bodies to process. This picture does not deviate much from the CC account of perception—except for the added emphasis on the body in this process. Enacted cognition, on the other hand, emphasizes that perception is *for action,* and that our cognitive processes are shaped by this action-orientation.[51] Therefore, for enactive cognition, perception is a process that essentially involves the brain, our body, and our environment. The novel point enacted cognition introduces here is giving perception a functional telos: Whereas CC and the other Es takes perception to be an arbitrary information-gathering function, enacted cognition suggests that this information is essentially gathered and characterized by default *for the sake of* guiding action.

To better understand enactive cognition, it is useful to account for its history. The enactive approach was first defined by Varela, Thompson, and Rosch in their 1991 book *The Embodied Mind,*[52] which was influenced by phenomenology, psychology, theoretical biology, Buddhist philosophy, and behaviour-based robotics. Specifically, the

[50] Gibson, 'The Ecological Approach to Visual Perception,' 127.
[51] Gallagher, 'Embodied and Enactive Approaches to Cognition.'
[52] Varela et al., 'The Embodied Mind'.

phenomenological influence comes from Husserl's pragmatic idea that perception is shaped "in terms of what *I can do* with them".[53] Further, Merleau-Ponty adds the corollary that our primary experience of the world is essentially pre-reflective and action-oriented rather than reflective, contemplational, and observational. In other words, these authors suggest that perception does not work according to these steps: 1) Arbitrarily receive information about the world. 2) Translate this arbitrary information into practical information which I can understand and respond to. Rather, these authors (and enacted cognition) suggest that perception works like this: 1') Receive specific information about the world *in terms of* how we can interact with it. 2') Decide how to react, if at all. In the first case, our understanding of the world comes after perceiving something—a result of contemplating arbitrary information first. In the latter case, our understanding of the world comes *with* and *as* the perception—already defined in terms of what I can do with it by default. No extra steps occur between perceiving and understanding. Hence, perception is pre-reflective. These ideas are also what ultimately inspired Gibson's idea of affordances from §1.3.

Therefore, enacted cognition takes perception to be essentially *for* guiding action. But what does it say about cognition and cognitive processes? To this, we can start by mentioning that enacted cognition adopts the principles of strong embodiment. That is, it also considers the body as playing a critical role in shaping cognitive processes. Combining this fact with the enactive account of perception reveals one important implication of enactive cognition: Cognition in humans is different from cognition in nonhumans because of the differences in each's biological makeup, and the different affordances that these unique bodies enable about their environments. Each species has its own unique combinations of body parts, functions, and perceptive apparatuses. Accordingly, each species understands and interacts with their environments in different ways. As Thompson puts it, each organism "meets the environment

[53] Gallagher, 'Embodied and Enactive Approaches to Cognition.'

on their own sensorimotor terms", and this is precisely the way that one enacts its environment"[54].

On a further note, we can extend this thesis to account for, say, the physical differences between individual species members. For instance, humans are not all identical; sometimes we have extra limbs, sometimes we have less, some of us can reach the basketball net reliably, some might never reach it—myself included. Recall the example of walking along a sidewalk from §1.2.2. Strong embodied cognition suggests that our brains do not merely represent our bodies with B-formatted representations but rather involves our bodies as an essential component of our cognitive apparatus, such that we can make reliable predictions about our own capabilities but not the capabilities of others. Enactive cognition introduces something new and meaningful to this situation: That we will interact with the environment differently whether or not we can jump over that wall. Such differences between our bodies will call for different affordances in perception. Imagine now that you need to run away from a Canada goose that is chasing you along that sidewalk. If you perceive the wall as something you can jump over, then you might escape by running towards the wall to jump over it. However, if you perceive the wall as something you cannot jump over, then you might decide to keep running straight to outrun it. In short, enactive cognition suggests—in support of strong embodied cognition—that biological differences can enable or disable organisms to interact with their environments in their own respective ways.

Whether non-physical differences between organisms can account for variations in perception is unclear, but nonetheless, it can help us better understand the enactive campaign. For example, autism spectrum disorder (ASD) has genetic and biological markers, but these physical traits are far less noticeable—DNA is small. However, the psychological differences

[54] Thompson, Evan. 'Sensorimotor Subjectivity and the Enactive Approach to Experience'. Phenomenology and the Cognitive Sciences 4, no. 4 (December 2005): 407–27.

between someone with ASD and someone without ASD are clearer. So, do people with ASD perceive differently versus those without ASD, according to the enacted understanding of perception? This seems hard to answer. According to the enacted concept of perception, we could reformulate this question to instead ask: Do people with ASD interact with their environment differently than people without ASD? Still difficult, but likely easier study.

Finally, enacted cognition moves away from extended cognition in one notable way. Enactive approaches argue that cognition is an integrated system, distributed between the brain, body, and world—including both our physical and social environments.[55] This understanding is related to the extended cognition campaign, which suggest that cognition (and the mind) *can be* extended to the body and the environment. But enacted cognition takes an extra step by suggesting that bodily processes play an irreducible and irreplicable role in contributing to the constitution of consciousness and cognition. In other words, the extended cognition campaign suggests that cognition *can* extend beyond the brain and body, while enacted cognition suggests that bodily processes are an essential component of cognition.

This idea echoes important earlier theories in cognitive science research, namely, Tim van Gelder's dynamical hypothesis. In his 1998 article, Van Gelder suggests that cognitive agents are best understood as dynamical systems rather than digital computers, and that empirical research was warranted to start justifying these claims[56]. Since then, empirical research been conducted to support some of these claims, as cited throughout this chapter. Enacted cognition's notable contribution here is its suggestion that the brain, body, and environment are all necessary parts of a dynamic cognitive system.

[55] Gallagher, 'Embodied and Enactive Approaches to Cognition.'
[56] Van Gelder, Tim. 'The Dynamical Hypothesis in Cognitive Science'. Behavioral and Brain Sciences 21, no. 5 (October 1998): 615–28.

1.5. The influence of phenomenology

Hidden in the background of all 4E accounts of cognition, I argue (although not novelly), is an implicit congruence with phenomenology. In some places, this relation is more explicit. Gibson, for example, was inspired by phenomenological methodology when forming his idea of affordances.[57] Specifically, by the idea of intentionality, which will be discussed in more detail in the next chapter. In other places, however, phenomenology and cognitive science continue to develop completely independently. The 4E programme is generally one step closer to bridging the gap between these two traditions, but phenomenology is still considered to be a separate discipline for most cognitive scientists and philosophers of mind, evidenced primarily by the lack of citations to phenomenology that current cognitive science research outputs.

In their book *The Phenomenological Mind*, Shaun Gallagher and Dan Zahavi make a compelling case for joining phenomenology and philosophy of mind research.[58] Their motivation for this move is twofold. First, there is a practical case for joining the two—they can support each other for the sake of progress. Second, inviting phenomenology into the cognitive science and philosophy of mind tradition provides an opportunity to revive phenomenology.

To the first point, Gallagher and Zahavi want to convince scientific readers that the typical problems addressed by cognitive science—such as "how the brain works, what counts as cognition, all the extremely difficult 'easy problems', as well as the 'hard' problems of consciousness"—are so complex that multiple perspectives from many disciplines must be considered to adequately address them.[59] Further, the authors suggest that "the best account

[57] Gallagher, 'Embodied and Enactive Approaches to Cognition,' 16-17.
[58] Gallagher and Zahavi, 'The Phenomenological Mind'.
[59] Ibid., XIV.

of cognitive science … consists of the cognitive *sciences*"[60]. This means that solving problems in cognitive sciences requires that we look to other practices and disciplines, both within and outside of the classical sciences. Phenomenology, as is argued and I agree with, offers many important perspectives that can meaningfully contribute to solving these problems.

Gallagher supports this project in another way in *Phenomenology.* In this book, he forms a separate thesis that seeks to reject reductionist tendencies in cognitive science and the sciences more generally[61]. One example of a reductionist tendency in the sciences is that of psychologism: The doctrine which generally states that the laws of logic can be reduced to the laws of psychology.[62] Another reductionist tendency, more related to philosophy in general, is that of logical positivism: A (largely) empirical movement that seeks to prioritise the role of logic and mathematics in understanding philosophy as it relates to the scientific enterprise.[63] Cognitive science for Gallagher and Zahavi, therefore, has a multiplicative character, not a reductionist character. In other words, a complete cognitive science (assuming that is possible) involves multiple disciplines, perspectives, and approaches to research.

To the second motivation, phenomenology has historically been out of fashion such that incorporating it into contemporary cognitive science and philosophy of mind research is a fruitful opportunity to not only further develop these disciplines, but also to contribute to the project of reviving interest in phenomenology more generally. This loss of fashion was due to many factors, one of which was the rise of logical positivism in the 20th century. In short, phenomenology is largely resistant to logical descriptions due to its nature of wanting to describe subjective experience, which could have deterred logical positivists from taking it

[60] Ibid., XIV.
[61] Gallagher, 'Phenomenology'.
[62] Martin, Kusch, 'Psychologism', in The Stanford Encyclopedia of Philosophy, n.d.
[63] Creath, Richard, 'Logical Empiricism', in The Stanford Encyclopedia of Philosophy, n.d.

seriously. To see this point (although phenomenology is far from having a single, widespread, agreed definition), consider two good recent definitions: The first, from Sokolowski reads "Phenomenology is the study of human experience and the ways things present themselves to us in and through such experiences."[64] Another, from Smith reads "Phenomenology is the study of structures of consciousness as experience from the first-person point of view."[65] In both cases, it is clear that logic and empirical standards are hard to apply due to the private and inaccessible nature that "structures of consciousness" and "the way things present themselves to us" has to anyone or anything outside our first person perspective.

Notably, in 1991, Varela, Thompson and Rosch published *The Embodied Mind* which made a clear and eventually popular statement about the relevance of phenomenology for cognitive science research.[66] Therefore, after its initial and short-lived conception in the 19th century with Brentano and Husserl, phenomenology has only recently started to be taken seriously again as a discipline in-and-of itself, and has had an even younger lifespan being studied for the sake of contributing to cognitive science.

With this in mind, although I have hitherto presented and compared the various approaches to 4E cognition in general, I am specifically interested in how phenomenology and 4E thought can contribute to problems in social cognition. In this thesis, I will consider how phenomenology can contribute to social cognition by starting with the 4E approaches to social cognition. But first, what is social cognition? Generally, it is an umbrella term for the general study of how humans are able to understand and interact with one another. In psychology, social cognition is the study of finding what cognitive underpinnings ground social behaviour, such as memory, attention, and metacognition.[67] In philosophy, discussion generally converges into one account—mindreading. Mindreading is the human practice of

[64] Sokolowski, 'Introduction to Phenomenology'.
[65] Smith, D. W. 'Phenomenology', in The Stanford Encyclopedia of Philosophy, 2018.
[66] Varela et al., 'The Embodied Mind'.
[67] Fiske and Taylor, 'Social Cognition'.

attributing mental states to each other, usually for the sake of predicting or explaining how others behave.[68] For instance, if someone is walking around with their eyebrows furrowed, head down, and at a brisk pace, we might explain this conspicuous behaviour by attributing to them the mental state of *anger* or *frustration*, etc. How exactly we go about producing and then attributing these mental states to others is another point of division in the literature. There is the theory theory account of mindreading and the simulation account of mindreading, which will be discussed in chapter two. In general, mindreading is the account of social cognition that philosophers of mind and cognitive scientists tend to endorse.[69]

Phenomenology has a lot to offer the mindreading literature and social cognition research more generally. If we can find relevant insights, concepts, and methods from phenomenology that fit into the social cognition literature by meaningfully integrating them into current discussion, then we will be advancing the important project set out by Gallagher and Zahavi in *The Phenomenological Mind*. In chapter two, I start this task. In the first two sections, I will summarise two of the most popular accounts of mindreading (which were just mentioned) that philosophers and scientists discuss—the theory theory account of mindreading in §2.1.1 and the simulation theory account of mindreading in §2.1.2. Then, I will introduce two phenomenological concepts which, I'll argue, is important for social cognition to consider. Those are intersubjectivity and empathy in §2.2.1 and §2.2.2, respectively. After these concepts are introduced, I will develop the thesis that empathy can be a sufficient condition for mindreading to occur in chapter three.

[68] Shapiro, Lawrence, and Shannon Spaulding. 'Embodied Cognition', in The Stanford Encyclopedia of Philosophy. Metaphysics Research Lab, Stanford University, 2024.
[69] Goldman, 'Mirroring, Simulating and Mindreading'.

Conclusion

In this chapter I have firstly provided an exegetical account of 4E cognition. The four E's entail extended, embodied, embedded, and enactive approaches to cognition. Despite the differences between each approach, the entire research programme is united in its belief that cognitive phenomena exists beyond the confines of brain and skull. Notably, this framework offers a crucial departure from classical cognitivism, which is the longstanding belief that the brain is privileged in hosting cognition.

In the extended camp, I explore three distinct 'waves' of the extended mind. Although there is contention between authors about what each wave entails, what is clear is that the extended paradigm continues to grow. In the embodied camp, I discussed the differences between weak and strong accounts of embodied cognition. While weak embodiment posits that the body plays an indirect role in cognition via body-formatted representations within the brain, strong embodiment posits that the body plays a direct and constitutive role in shaping cognitive experience by suggesting that the body is equally privileged with the brain in shaping cognitive processes. Embedded cognition adds onto extended cognition by suggesting that our environments necessarily scaffold cognition such that features in our environment can be considered features of our own cognition. Enacted cognition alters the role of perception in cognition, employing it to be essentially *for* guiding action.

I conclude this chapter by underscoring the relevance that phenomenology has for influencing and supporting 4E research. Specifically, I discuss the project which Shaun Gallagher and Dan Zahavi introduce in their book *The Phenomenological Mind* of incorporating phenomenology into philosophy of mind and cognitive science more generally. I ultimately assent to their view and their project, briefly suggesting that phenomenology can contribute specifically to the social cognition literature—a task I develop in later chapters.

Chapter 2: What are 4E and phenomenological approaches to social cognition?

In this chapter I present and compare popular accounts of social cognition as discussed in the 4E and phenomenological literature. The research question motivating this chapter is "how is social cognition understood in the philosophy of mind versus in phenomenology, and do they complement each other?" §2.1 presents the accounts of social cognition found in 4E, philosophy of mind, and cognitive science more broadly. Specifically, §2.1.1 presents the Theory Theory account of mindreading, which I then compared to the Simulation Theory account of mindreading in §2.1.2. In §2.2 I present the phenomenological approaches to social cognition. §2.2.1 presents the phenomenological concepts of intentionality and intersubjectivity as primarily described by Franz Brentano and Edmund Husserl. Then in §2.2.2 I show how these concepts evolved into the phenomenological study of empathy as described by Edith Stein in her book *On the Problem of Empathy*. Ultimately, I find that phenomenology's approach to social cognition has a lot to offer the non-phenomenological approach.

The goal of this chapter is to equid the reader with a strong understanding of what social cognition generally looks like between three seemingly distinct disciplines: phenomenology, philosophy of mind, and the classical sciences. I do this here so that in chapter three I can demonstrate how the phenomenological discussion of social cognition can meaningfully contribute to the non-phenomenological discussion of social cognition more broadly. If successful, this will work to advance Shaun Gallagher and Dan Zahavi's project of reviving phenomenology by incorporating it into contemporary non-phenomenological conversations. Therefore, let us start by understanding what 4E approaches to social cognition are.

§2.1. 4E approaches to social cognition

As briefly mentioned in chapter one, social cognition is the broad study of how humans understand and interact with each other. Unsurprisingly, there are various competing theories which attempt to provide the strongest possible account social cognition. Mindreading is one dominant account of social cognition. Most contemporary theories of mindreading, including philosophical ones, hinge on scientific discoveries to answer this question. For example, discoveries in psychology and cognitive science like the false-belief test[70] and mirror neurons[71] ground many mindreading accounts of social cognition.

When philosophers and scientists talk about mindreading, they typically refer to the human practice of attributing mental states to others for the sake of explaining behaviour.[72] For instance, according to Alvin Goldman, mindreading consists of forming a belief or judgment about another's mental state.[73] These definitions of mindreading offer a general account of social cognition. Therefore, it is best to understand social cognition as an umbrella term which refers to the study of how humans understand and interact with each other, whereas mindreading is the most popular account of social cognition with different theories that compete and evolve. Other names for the same capacity of attributing mental states to ourselves and others include commonsense psychology, naïve psychology, folk psychology, more popularly, Theory of Mind.

Notably, the 4E cognition programme has had a widespread influence on various disciplines which have something to do with social cognition. Generally, it has heavily influenced psychology, cognitive science, and the philosophy of mind. And specifically, the

[70] H. Wimmer and Josef Perner, 'Beliefs about Beliefs: Representation and Constraining Function of Wrong Beliefs in Young Children's Understanding of Deception,' in Cognition 13, no. 1 (January 1983): 103–28.
[71] Vittorio Gallese and Alvin Goldman, 'Mirror Neurons and the Simulation Theory of Mind-Reading,' in Trends in Cognitive Sciences 2, no. 12 (1 December 1998): 493–501.
[72] Goldman, 'Mirroring, Simulating and Mindreading.'
[73] Gallese and Goldman, 'Mirror Neurons and the Simulation Theory of Mind-Reading.'

mindreading literature. Henceforth, when I say '4E accounts of social cognition' I refer to a conglomerate of research within the philosophy of mind, cognitive science, and psychology literature that has explicitly contributed to the 4E programme directly or otherwise has been influential in promoting 4E theories.

§2.1.1. Theory Theory

The theory theory (TT) account of mindreading suggests that humans try to understand what is happening in the minds of others by developing a theory about what mental states they possess. Having a theory about another's mental states in this sense means that you have conjured a complex a conceptual system about how others may develop, beliefs, thoughts, intentions, etc. Only from this can you draw a hypothesis that someone feels, believes, thinks, intends, etc. a specific way or thing. We develop hypotheses about another's mental states via a science-like method, where we rely on law-like observations and inferences to draw conclusions.[74] For instance, we might have a certain conceptual system in us which associates pain with negative emotion—that is, a theory of negative emotion and pain—and then we might hypothesize that when someone falls down a flight of stairs, they are experiencing a negative emotion via pain. The function of theorising and hypothesising is opposed to having a certain skill or cognitive disposition because in these cases, you are instead expressing a certain kind of know-how, whereas developing a theory and hypothesis entails merely propositional knowledge.[75]

Developing a theory is science-like as opposed to strictly scientific because it relies on scientific reasoning without adhering to scientific standards. This means that we make inferences about the mental states of others by conjuring theories, which we in turn develop

[74] Ibid., 20.
[75] Cf. Gilbert Ryle, 'I.—Knowing How and Knowing That: The Presidential Address,' in Proceedings of the Aristotelian Society 46, no. 1 (1 June 1946): 1–16.

by relying on law-like principles. But our ability to commit to conclusions about what those mental states might be are not contingent on the same rigorous standards as the strict sciences—this is why standard mindreading accounts are considered folk theory. For example, it is law-like to expect that someone will be tired after running five kilometres, and one might make this conclusion without asking the person themself. Although not everyone will feel tired after a five-kilometre run, it is generally the case that one might, and even if the runner is not tired after the run, they have certainly exhausted a nontrivial amount of energy during the run. Hence, the conclusion is law-like. However, we would be more justified in making a conclusion if we ask them personally—a standard that the strict sciences might expect. But adhering to these law-like principles is generally reliable. Therefore, the TT account of mindreading involves predicting the mental states of others by relying on a set of law-like principles from which we draw inferences.

Notably, TT is not a distinctly 4E approach to social cognition: All the relevant processes occur within the confines of brain and skull, and there is nothing obvious embodied or extended about how TT processes unfold. So why do I include it in this section titled "4E approaches to social cognition"? Primarily because truly 4E approaches to social cognition emerged from TT in a way that, without it, we might not have simulation theory or other more developed folk psychological accounts of mindreading. In other words, it is necessary to discuss TT in order to understand simulation theory and the problems it solves. So, although TT is not a distinctly 4E approach to social cognition, it informs relevant discussion about it today.

Some authors call this methodological standard 'folk psychology', and the TT account of mindreading is largely considered a folk psychological account of mindreading despite academic authorship on it. This means that it employs non-expert, colloquial, every day means of arriving at its conclusions. Some authors think that folk psychology is an excellent

means to helping us predict behaviour. Jerry Fodor suggests that the mental states we ascribe others via TT mindreading processes are generally accurate such that the sadness, exhaustion, frustration, etc., we derive and attribute to others are generally associated with the individuals we prescribe them to.[76] Other authors like Paul Churchland think that folk psychology as a theory is radically false such that we should eliminate it.[77] Despite these differences, both philosophers agree that folk psychology is motivated by a science-like theory that draws conclusions based on as a set of law-like generalizations.[78]

Considering those who have supported the TT account of mindreading, developmental psychologists Alison Gopnik, Andrew Meltzoff, Josef Perner, and Henry Wellman apply it to young children, who they consider "little scientists who form and revise their thinking about various domains in the same way scientists do."[79] Notably, these little scientists gather information about the world, generate hypotheses with that information, and change their theories in response to new information. As we will now see, they do not merely hypothesize about observable phenomena, but unobservable phenomena like mental states as well.

In 1983, Wimmer and Perner ran an experiment which led to the most famous discovery within the developmental branch of mindreading, which deals with figuring out when humans develop mindreading capabilities.[80] In this experiment, a child is seated with a box and a bin on a table in front of them. Then, a person named Maxi walks in and places a toy in the box before leaving. Then, another person, Mini, walks into the room and moves the same toy out of the box and puts it into the bin—notably, without Maxi seeing. Finally, Maxi walks back into the room and the child who has observed everything is asked where Maxi

[76] Fodor, 'Psychosemantics'.
[77] Paul M. Churchland, 'Eliminative Materialism and the Propositional Attitudes,' in The Journal of Philosophy 78, no. 2 (February 1981): 67.
[78] Goldman, 'Joint Ventures'.
[79] Ibid., 21.
[80] Wimmer and Perner, 'Beliefs about Beliefs.'

will search for the toy. The results show that three-year-olds think Maxi will look in the box for the toy, and that four-year-olds think Maxi will look in the bin. Moreover, children between thirteen and eighteen months did not seem to respond consistently or reliably. Therefore, the authors conclude that because the three-year-olds do not seem to understand the concept of someone holding a false belief (Maxi's false belief that the toy is still in the box), then they must lack the ability to mindread. Further, because four-year-olds do seem to understand the concept of someone holding a false belief, then they must have the ability to mindread. In other words, because three-year-olds typically could not indicate Maxi's false belief, they appeared unable to mindread. On the other hand, because four-year-olds could indicate Maxi's false belief, they appear able to mindread. From these results, it has later been argued that a module in the brain is responsible for our ability to mindread, and that it sufficiently develops at around age four.[81]

So, at age three we generally cannot mindread. But at age four, we seemingly can. What has happened in between to account for this change? The story told here by TT theorists is that kids eventually become able to turn their beliefs into propositional attitudes that can be understood as true or false[82]. At age three, children have primitive conceptions of beliefs and desires which only communicates to them a simple relationship between the cognizer and their external world; simple in that they do not admit to the possibility of error. In other words, the child at age three cannot grasp the idea that a belief can be false. At age four, this ability seems to develop into a more sophisticated one; sophisticated in that they recognise their beliefs can be true or false. Perner calls this a difference "conceptual deficit",[83] and it is this that makes the three-year-old unable to pass a false-belief test. Around

[81] R Saxe and N Kanwisher, 'People Thinking about Thinking people: The Role of the Temporo-Parietal Junction in 'Theory of Mind,' in NeuroImage, 19, no. 4 (August 2003): 1835–42.
[82] Goldman, 'Joint Ventures'.
[83] Josef Perner, 'Understanding the Representational Mind'.

the age of four, children develop propositional beliefs such that they can pass the false-belief test.

Notably, the false belief test has evolved since Wimmer and Perner. More recently in 2012, a false belief tests conducted by Zijing He, Matthias Bolz, and Renée Baillargeon used a different method and found additional evidence of mindreading capabilities in children.[84] One of the key differences in this test versus Wimmer and Perner's was relying on spontaneous responses from the subjects instead of elicited responses. The study involved two experiments, testing for two different theories of mind. In the first experiment, the children's expectations were violated by changing the location of the target object amidst an identifying task. In the second experiment, expectations were similarly violated but this time by swapping the target object with another. In short, it was found that children below the age of four—as young as two and a half—were found to exhibit a "consistent and continuous picture of early false-belief understanding."[85] Accordingly, Wimmer and Perner were likely false in their conclusion about how old we are when we develop the capacity to form theories of mind. However, these results appear to only bolster the strength of TT and folk accounts of mindreading more generally by suggesting that our mindreading capabilities are more primitive than previously thought.

Alternatively, many authors have argued that the TT account of mindreading is implausible. Shaun Gallagher and Daniel Hutton criticize its explanatory power, doubt its conclusions, and reassesses the developmental psychology literature that emerged since the seminal false-belief test experiment.[86] First, these authors argue that TT's commitment to being a folk psychological account of mindreading means that it is inherently too weak to

[84] Zijing He, Matthias Bolz, and Renée Baillargeon, 'False-belief Understanding in 2.5-year-olds: Evidence from Violation-of-expectation Change-of-location and Unexpected-contents Tasks,' in Developmental Science 14, no. 2 (March 2011): 292–305.
[85] He, Bolz, and Baillargeon, 'False-belief Understanding in 2.5-year-olds'.
[86] Gallagher and Hutto, 'Understanding Others through Primary Interaction and Narrative Practice', 17–38.

explain the nuances, varied sorts of experiences that arise in our day-to-day lives. This critique is not levied against TT specifically, but against folk psychological accounts in general. However, because the TT account of mindreading is a folk psychological account, it is subject to the same criticism. Therefore, Gallagher and Hutton seem to agree with Paul Churchland's position that folk psychology is not sufficiently strong enough to offer explanations for relevant phenomena such that it should be eliminated.

Gallagher and Hutton's reasons for doubting TT's conclusions are based on phenomenological and logical objections. To the former, Gallagher and Hutton think that we cannot accept TT as an *explicit* theory—that is, a theory which tries to make claims about what we experience and do consciously. This is because the act of theorizing about another's mental states is not obviously present in our conscious experience when we supposedly do mindreading in this way. In other words, if the process of theorizing about another's mental states and attributing those mental states to them is primary and explicit to us, then it should be obvious whenever this is actually happening. However, this is not the case—we do not consciously experience mindreading processes whenever they supposedly occur. [87] Therefore, according to these authors, the TT account of mindreading is not an *explicit* theory because it cannot attribute conscious mental states to others. But can it instead be a viable *implicit* theory? That is, a non-conscious mental state.

Gallagher and Hutton's "logical" objection suggests that TT cannot be accepted as an implicit theory either. First, at the time they wrote this, there was no evidence that TT mindreading processes were implicit—that is, a process that unfolds unconsciously. Baillargeon et al.'s research from above seems to suggest otherwise now, since they relied on recording spontaneous responses as opposed to elicited ones. However, given the time that Gallagher and Hutton were writing this, there was previously no way to justify this claim.

[87] Ibid.

Second—and perhaps why there was no evidence thereof—it is not clear what exactly it means for these processes to be implicit. Therefore, before Baillargeon et al.'s research, there was no clear criteria for making such a claim. However, even in light of their discovery of implicit mindreading processes now, TT can still be considered dubious if we reject a given definition of 'unconscious processes' or criticise whether their results are truly representative of such unconscious processes. To the latter, most false-belief experiments before Baillargeon et al only seem to test for explicit mindreading processes and not implicit processes:[88] Recall that in the Wimmer and Perner experiment from above, subjects were asked to explicitly—that is, consciously—consider what Maxi and Mini's behaviour means to them. Alternatively, Baillargeon et al. used a spontaneous approach. In other words, asking the kids to explicitly think about where they think Maxi will ask for the toy forces them into a conscious deliberation. Therefore, according to Wimmer and Perner's experiment, it follows there are no reasonable grounds for concluding that mindreading processes are implicit either because the experiments that assess for mindreading processes only probe for explicit processes.

So far, TT accounts of mindreading are based on and support classical cognitivism (CC) approaches to research. This is, firstly, because there is no obvious sense of embodiment, extension, embedded or enacted cognition in the Wimmer and Perner experiments—nor in Baillargeon et al., I add—nor the conclusions drawn from them both. Even if they did, however, 4E had little-to-no widespread influence in cognitive science, philosophy of mind, or psychology when TT was being developed. So, it is unsurprising that TT was a CC picture of mindreading because there was no serious competing programme present to challenge or influence the classical status-quo. Despite this, however, TT made room for competing theories of mindreading to emerge, partly as a response to these issues

[88] Ibid.

mentioned above, and partly in response to new empirical findings in cognitive science. The simulation theory account of mindreading is one popular successor to TT which we will now review. Here, we will see how 4E approaches to social explicitly agree with some developments made in simulation theory, namely, with embodied simulation.

§2.1.2. Simulation Theory

Simulation theory (ST) claims that we have no need for mindreading as described by TT theorists because we already have a model for simulating the mental states of others, namely, our own mind.[89] The basic picture of ST mindreading looks like this: When I see you waiting outside in the rain for your bus from the comfort of my car, I can 'step into your shoes' and imagine what I would feel like if I was in your position. The result of this imaginative process is an internally created simulation about your propositional attitudes, mental states, and experiences in that situation. Thus, we do not need to develop a theory about your mind if we can simulate it with our own.

Earlier accounts of ST were introduced by Robert Gordon in 1986 [90] and focused primarily on attributing propositional attitudes to others, e.g. 'She does not want to be standing in the rain'. Other authors endorsing ST in the 1980's include Jane Heal[91] and Alvin Goldman.[92] Recent accounts of ST, which I will focus on, have narrowed their focus towards discussion about how we attribute simpler mental states such as emotions to others, e.g. 'she is upset about standing in the rain', or even simpler, 'she is upset'. This shift occurred in response to the discovery of mirror systems by Vittorio Gallese and Alvin Goldman in 1996.[93] Mirror systems are cognitive systems that involve the activation of mirror neurons

[89] Ibid.
[90] Robert M. Gordon, 'Folk Psychology as Simulation,' in Mind & Language 1, no. 2 (June 1986): 158–71.
[91] Jane Heal, 'Replication and Functionalism,' in Language, Mind and Logic, ed. Jeremy Butterfield, vol. 14 (Cambridge University Press, 1986), 135--150.
[92] Alvin I. Goldman, 'Interpretation Psychologized,' in Mind & Language 4, no. 3 (September 1989): 161–85.
[93] Giacomo Rizzolatti et al., 'Premotor Cortex and the Recognition of Motor Actions,' in Cognitive Brain Research 3, no. 2 (March 1996): 131–41.

when conducting simulation-based mindreading. To understand mirror systems, we should first understand what mirror neurons are.

Mirror neurons are a class of multi-functional neurons that fire when an individual both performs a specific action and observers another individual performing the same specific action.[94] For example, consider what happens in the brain when you do a push up: A vast collection of neurons must fire for this action to occur. One subset of this vast collection of neurons are mirror neurons. Now, when you see somebody else doing a push up, this same subset of mirror neurons activate again. A research project led by Giacomo Rizzolatti in 1996 first discovered mirror neurons in Macaque monkeys by collecting single-cell recordings of neural activity in their brains.[95] In short, single-cell recordings are obtained by placing electrodes in the brain that record the activity of individual neurons.[96] These neurons were called "mirror neurons" because the action plan of an agent—say, to do a push up—is mirrored by a similar action plan in the observer according to the firing of these neurons. Mirror systems are therefore the neural underpinnings of mindreading processes, involving the use of mirror neurons to attribute mental states to others. Moreover, these simulated 'pretend states' can be fed into the simulator's internal cognitive mechanisms to produce and attribute subsequent states about the target.

At around the same time, mirror neurons were found in humans too by Fadiga et al. in 1995 [97] using functional magnetic resonance imaging (fMRI) and transcranial magnetic stimulation; not single-cell recordings. One disadvantage from this difference in method is that we lack empirical evidence for the existence of mirror neurons in humans via single-cell studies. However, one advantage is that the scans of entire human brains via fMRI imaging

[94] Ibid.
[95] Ibid.
[96] Shannon Spaulding, 'A Critique of Embodied Simulation,' in Review of Philosophy and Psychology 2, no. 3 (September 2011): 579–99.
[97] L. Fadiga et al., 'Motor Facilitation During Action Observation: A Magnetic Stimulation Study,' in Journal of Neurophysiology 73, no. 6 (1 June 1995): 2608–11.

revealed that multiple mirror neuron systems exist.[98] For example, motor mirroring via sound and vision has been found by Kohler et al.;[99] mirroring for sensations like touch[100], for pain[101], and for emotions—particularly, disgust—[102] have all emerged since the 1990s. Therefore, in short, mirror neurons are a class of multi-functional neurons which fire in response to both conducting and observing specific behaviour. And when mirror neurons are involved in simulation-based mindreading processes—that is, by using the observer's mind as a surrogate for the target's mind—a mirror system is in play.

One early concern about the idea of simulation is that it can be reduced back to TT. Patricia Kitcher and Daniel Dennett and define the problem like this:

> How can [simulation] work without being a kind of theorizing in the end? For the state I put myself in [when attributing simulated mental states to others] is not belief but make-believe belief. If I make believe I am a suspension bridge and wonder what I will do when the wind blows, what "comes to me" in my make-believe state depends on how sophisticated my knowledge is of the physics and engineering of suspension bridges. Why should my making believe I have your beliefs be any different? In both cases, knowledge of the imitated object is needed to drive the make-believe "simulation," and the knowledge must be organized into something rather like a theory."[103]

In other words, the particular mental states and propositional attitudes we attribute to others when mindreading via simulation are always, for Dennett, created and informed by our

[98] Spaulding, 'A Critique of Embodied Simulation.'
[99] Evelyne Kohler et al., 'Hearing Sounds, Understanding Actions: Action Representation in Mirror Neurons,' in Science, 297, no. 5582 (2 August 2002): 846–48.
[100] Christian Keysers et al., 'A Touching Sight,' in Neuron 42, no. 2 (April 2004): 335–46.
[101] Tania Singer et al., 'Empathy for Pain Involves the Affective but Not Sensory Components of Pain,' in Science 303, no. 5661 (20 February 2004): 1157–62.
[102] Bruno Wicker et al., 'Both of Us Disgusted in My Insula,' in Neuron 40, no. 3 (October 2003): 655–64.
[103] Kitcher and Dennett, 'The Intentional Stance,' in The Philosophical Review 99, no. 1 (January 1990): 126.

knowledge about that person such that any conclusions we draw accordingly are still merely the result of formulating hypotheses according to a theory. This is the fundamental process of TT as discussed in the last section. At worst, then, because our knowledge of someone else can be extensive or limited, or right or wrong, the mental states and propositional attitudes we end up attributing are educated guesses. At best, they can be understood as inferences to the best explanation. Therefore, simulation-based mindreading is still a theory-based account of mindreading.

In response to this, Goldman distinguishes between theory-driven simulation and process-driven simulation[104] and suggests that the latter kind of simulation avoids Dennett's concerns. Theory-driven simulation, according to Goldman, must be used when simulating cognitive systems that are notably different then us. In other words, when we simulate the mental states of others whose cognitive systems operate very differently compared to ourselves due to several sorts of factors. For example, perhaps our target is an individual with a strikingly different, language, lifestyle, education, and general circumstance from ours. In this case, our simulation of their mental states—assuming that mirror neurons are still involved—ought to include theorizing about the person *in light of* these factors to bolster our conclusions about what mental state or representation they might possess. Process-driven simulations, alternatively, can be used when simulating systems that more closely resemble oneself. Therefore, "If the process or mechanism driving the simulation is similar enough to the process or mechanism driving the target, and if the initial states are also sufficiently similar, the simulation might produce an isomorphic final state to that of the target without the help of theorizing."[105] In short, there are some cases in which the simulator and his target are sufficiently similar in terms of cognitive character, history and/or circumstances such that his

[104] Alvin I. Goldman, 'Interpretation Psychologized,' in Mind & Language 4, no. 3 (September 1989): 161–85.
[105] Goldman, 'Joint Ventures'.

mind can simulate mental states about his target sufficiently well without the need for further theorizing to fill in any knowledge gaps.

By incorporating mirror neurons into the ST literature, Vittorio Gallese—a member of the research group that initially found mirror neurons in the Macaque monkeys—defends the idea that mirror neurons play a significant explanatory role when it comes to our ability to understand and engage with other people successfully.[106] In other words, mirror neurons provide the basis for a strong account of social cognition that surpasses mindreading theories that rely solely on mentalistic simulation. His basic argument is that because our brains share a similar neurological signature between observing an action, emotion, etc. and acting out that same action, emotion, then our ability to understand what another person is doing (viz. the goal of social cognition) is due to our brains activating *as if* we were doing what the other person is doing.[107] He calls this view *embodied simulation*, and with this, we have a more explicit connection to the 4E literature, namely, with embodiment.

To better see this connection, it is helpful to contrast embodied simulation with what Shannon Spaulding calls mentalistic simulation when discussing simulation-based mindreading. Mentalistic simulation is the process of understanding another by imagining what their mental states are. For example, trying to imagine how someone feels waiting in the rain for their bus as you read this. This is a conscious and voluntary act as opposed to embodied simulation via mirror neurons which is automatic and unconscious.[108] The firing of mirror neurons affords a stronger embodied account of simulation because the target's brain activity explicitly stimulates similar brain activity in the observer as well. By contrast, in mentalistic simulation the subject only imaginatively adopts the targets mental states such

[106] Vittorio Gallese, 'Before and below "Theory of Mind": Embodied Simulation and the Neural Correlates of Social Cognition,' in Philosophical Transactions of the Royal Society B: Biological Sciences 362, no. 1480 (29 April 2007): 659–69.
[107] Ibid.
[108] Spaulding, 'A Critique of Embodied Simulation,' 581.

that there is no similar mirroring activity—only individual processes. Therefore, the discovery of mirror neurons and its influence on embodied simulation allows for embodied simulation to be a distinctly 4E account of ST, namely, as an embodied account, because of direct relationship that other bodies bear with our own in social interactions.

Embodied simulation and the philosophical significance of mirror neurons more generally have also been subject to criticism. One notable objection comes from Shannon Spaulding's *Mirror Neurons and Social Cognition*[109]. Spaulding argues that mirror neurons play a philosophically and empirically minimal role in social cognition. Spaulding's argument partly hinges on the fact that there is little consensus about how and why mirror neurons are exactly relevant to social cognition. Embodied simulation for Vittorio from above for example, is not exactly the same thing as embodied simulation for Goldman and Frederique,[110] for example. Another argument she makes, however, is that mirror neurons are *at best* contributory causes of action understanding. That is, as opposed to being necessary or sufficient causes. This means that mirror neurons are merely helpful for understanding behaviour—they do not directly cause action understanding, and they are not needed for action understanding to occur. Notably understanding another's actions is relevant for understanding another's mind insofar as mental states are often motivators for acting in certain ways: For example, if I have the mental state of desiring cake to eat, my corollary action of going to get a piece of cake can be understood by attributing to me the mental state of desiring; namely, desiring cake. To make the argument that mirror neurons are neither necessary nor sufficient for action understanding, then, Spaulding relies on the distinction between 'broadly congruent' and 'strictly congruent' mirror neurons:

[109] Shannon Spaulding, 'Mirror Neurons and Social Cognition,' in Mind & Language 28, no. 2 (April 2013): 233–57.
[110] Alvin Goldman and Frederique De Vignemont, 'Is Social Cognition Embodied?,' in Trends in Cognitive Sciences 13, no. 4 (April 2009): 154–59.

After the initial discovery of mirror neurons in general, scientists like Dreyer et al.[111] and others discovered two specific kinds of mirror neurons: Broadly congruent and strictly congruent mirror neurons. Broadly congruent mirror neurons activate in response to the observation or execution of broadly construed actions. For example, there are various types of grasps that a monkey can perform such as a pincer grasp, a full-hand grasp, etc.; broadly congruent mirror neurons will fire in response to executing or observing either type of grasp—as long as it can be broadly interpreted as grasp in general. Even if the grasp is made with the feet, broadly congruent mirror neurons will fire.[112] Strictly congruent mirror neurons, conversely, will fire only in response to narrowly construed behaviour. For example, a certain set of strictly congruent mirror neurons will fire in response to observing or executing a pincer grasp, and another different set of strictly congruent mirror neurons will likewise respond to a full-hand grasp specifically.[113]

How important are these mirror neuron types for understanding action? First, we need to know what counts as action understanding in this context. To do this, we must distinguish between an action itself and the end to which that given action is a means to. For example, if I want to itch my head in class and I raise my arm up to do this, itching my head is the end and raising my arm up to my head is the means. Action understanding as I use the term here means recognising someone's observed behaviour precisely as the means to achieving the end which they intended their behaviour to achieve. In other words, if a teacher mistook my hand raise as my means for asking a question, then she did not understand my action. If she instead recognised that I was raising my hand precisely to scratch my head, then she did understand my action.

[111] Alexander M Dreyer et al., 'Grasp-Specific High-Frequency Broadband Mirror Neuron Activity during Reach-and-Grasp Movements in Humans,' in Cerebral Cortex 33, no. 10 (9 May 2023): 6291–98.
[112] Ibid., 234-235.
[113] Ibid., 235.

Back to the question at hand: How important are broadly congruent and strictly congruent mirror neurons for understanding action? According to Spaulding, the activation of strictly congruent mirror neurons can provide detailed information about an observed action—for instance, that a whole-handed grasp specifically occurred—and broadly congruent mirror neurons can provide general information about an observed action—for instance, that an eating-related grasp occurred. In both cases, mirror neurons provide some kind of information which can sometimes be used to facilitate action understanding. However, in neither one of these cases, individually or collectively, are mirror neurons somehow necessary nor sufficient for action understanding. Instead, mirror neurons are at best contributory causes for action understanding.[114] A contributory cause (X) is when X can contribute to bringing about Y, but X is not necessary or sufficient for bringing about Y. In other words, Spaulding means two things here. First, that the firing of mirror neurons can assist action understanding by providing the observer with useful information about the action they are observing. Second, despite this, mirror neurons themselves are nonetheless not necessary for action understanding to occur, nor is the firing of any kind of mirror neuron sufficient on its own for action understanding to occur. In short, mirror neurons can help us understand the actions of others, but we do not need them to understand others in any way.

Finally, Gallagher and Hutton's reasons for objecting TT (from the previous section) also applies to ST. Again, they are as follows:

i. As a folk theory, ST—and TT—have no explanatory power.
ii. ST produces dubious conclusions.
iii. Later research in developmental psychology suggests that children can develop nontrivial abilities to understand others before age three.

[114] Ibid., 237.

To the first, ST is a folk theory like TT and therefore falls prey to the same criticism of its lack of real explanatory power. To the second, ST's conclusions are similarly dubious according to phenomenological and logical concerns: The phenomenological concern is that ST cannot be an explicit theory because the firing of mirror neurons is not a conscious behaviour, and even when they do fire, it is not immediately aware to us that they are. Moreover, automatic and involuntary processes cannot be explicit by nature. And again, the logical concern is that ST cannot be a viable implicit theory either according to Gallagher and Hutton. This time, for three reasons. First, because brain processes and unconscious mechanisms responsible for simulation do not have a first or third person—that is, they do not relate to or pick out any individuals. Second, because these same processes and mechanisms for simulation cannot *use* a model such as the model of my own mind—they rather constitute my mind and its function. And third, because neural processes cannot pretend to form a mental state—they either activate or they do not.[115] Finally, to the third point, recall that Gallagher and Hutton were writing prior to Baillargeon et al.'s discovery that children show signs of being able to understand false beliefs at the age of two. Consequently, their third objection might be solvable, but their first two objections still pose a problem to TT.

§2.2. Phenomenological approaches to social cognition

So far, we have seen how TT and ST represent the standard accounts of social cognition in the philosophy of mind, cognitive science, and psychology literature at large. Less popular in contemporary literature are the phenomenological approaches to social cognition. In this section, I will bring these to light by following Shaun Gallagher's reading of Husserl and Brentano on intentionality and intersubjectivity, and then suggest that phenomenology has a

[115] Gallagher and Hutto, 'Understanding Others through Primary Interaction and Narrative Practice,' 17–38.

lot to offer the non-phenomenological literature such that they ought to be studied together. To do this, we should start by understanding how phenomenology differs in its understanding of what social cognition essentially is versus philosophy of mind, cognitive science, and psychology.

Hamme De Jaegher, Ezequiel Di Paolo, and Shaun Gallagher identifies at least four basic suppositions that inform standard accounts of social cognition.[116] He then argues that phenomenological approaches to social cognition in general challenge these suppositions. The first supposition is that of *hidden minds*: The motivating problem behind social cognition is that we do not have direct perceptual access to the minds or mental states of other people. Our ability to understand each other, then, requires that we use extra-perceptual cognitive systems like theorizing or simulation. The second supposition is *mindreading as default*: ST and TT mindreading systems constitute our default, primary way of understanding others. The third supposition is the *observational stance*: Our typical, everyday stance towards other people is observational. That is, we perceive others in the third-person perspective and explain their behaviour by observing what they do from this vantage point. Further, we can predict their actions, theorise, or simulate their mental states via this stance. The fourth supposition is *methodological individualism*: Our ability to understand others primarily depends on processes, mechanisms, and cognitive capabilities located inside our brains or the individual person. The following section will summarise how phenomenology generally approaches social cognition, in which these suppositions will be challenged. Then, in the final section, I will summarise Edith Stein's account of empathy as one notable phenomenological approach to social cognition that ultimately motivates my core argument in chapter three.

[116] Hanne De Jaegher, Ezequiel Di Paolo, and Shaun Gallagher, 'Can Social Interaction Constitute Social Cognition?,' in Trends in Cognitive Sciences 14, no. 10 (October 2010): 441–47.

§2.2.1. Intentionality and Intersubjectivity

Phenomenological theses about intersubjectivity are, generally, descriptions of how we perceive and understand other people. With this alone, we can see some connective tissue between phenomenology, cognitive science, and the philosophy of mind more broadly: Theses in social cognition like TT and ST are similarly attempts at describing how we understand other people. However, phenomenological intersubjectivity is unique in that it takes intentionality to be the starting point intersubjective experience. Therefore, before discussing intersubjectivity, I will review the concept of intentionality.

One starting point for phenomenology is the premise that our consciousness bears a certain kind of relationship with the world. Specifically, that our consciousness is essentially *about* the world. This means that whenever we think, perceive, or experience something, we necessarily think, perceive, or experience something about the world. When we desire, we desire something in the world; when we are sad, we are sad that the world is in a particular state—that your car is broken, or your favourite character in a show has suffered, for instance. Similarly, when we hear a bird's song, it is the bird that we are hearing. In all these cases, your consciousness is *about* something in the world such that consciousness is a dependant thing in general. This is the fundamental premise of intentionality. To better understand this idea, let us see where it comes from.

Intentionality as a concept dates to Aristotle, who claims to have adapted it from Empedocles. Later, medieval scholars adapted the term from Aristotle, but Franz Brentano ultimately revived the term as we have described it from the former for the sake of distinguishing between what he understood to be physical and psychic realms.[117] He puts forward the idea that psychic phenomena are unique in that they exhibit intentionality,

[117] Brentano, 'Psychology from an Empirical Standpoint.'

whereas physical phenomena do not. Therefore, every mental phenomenon bears reference to some content; mental phenomena are always about something other than itself such that mental phenomena cannot exist without this relation. As Brentano puts it: "In presentation something is presented, in judgement something is affirmed or denied, in love loved, in hate hated, in desire desired and so on".[118] In other words, representations are always representations *about* something, and this aboutness characterizes mental phenomena. Therefore, intentionality for Brentano entails firstly some kind of aboutness or direction towards an object, and second, that the object perceived, judged, loved, hated, etc. exists within us.[119] This second claim—that the object of our experience exists within us—can be understood through the lens of idealism: If my conscious experience is always essentially about something in the world, and that conscious experience exists within me, then it follows that the object which my conscious experience is about also exists within me. Husserl's account of intentionality notably differs from Brentano's. However, for my purposes here, it is only important to understand the basic picture of intentionality *without* the idealism: It is the thesis that our consciousness bears a specific relationship to the external world, namely that our consciousness is about it.

With this, we move on to understanding intersubjectivity. To do this, I present Gallagher's four key claims in Husserl's analysis of intersubjectivity: [120] First, intersubjective experience of empathy—that is, of other people—presupposes any primary, non-intersubjective experience of one's own personal body and the external world. In other words, Gallagher thinks that Husserl suggests intersubjectivity, when experienced, is a more primary experience than the recognition of our own bodies, as 'uniquely singled out' animate organisms within the environment. Whatever exactly it means for one experience to be 'more

[118] Ibid., 98.
[119] Ibid.
[120] Gallagher, 'Phenomenology,' 65.

primary' than another notwithstanding, we are at least familiar with the primacy of experiencing our own bodies. The point here is that intersubjectivity is a more primary experience than this. One natural conclusion that follows is that empathy and intersubjective experience more broadly speaking is a remarkably salient and pervasive component of our experience and perception. Moreover, it also follows that empathy and intersubjectivity is a salient and pervasive component of consciousness as well, insofar as our experiences and perceptions of the external world—including the people in it—ultimately characterises consciousness.

The second important claim of Husserl's analysis of intersubjectivity according to Gallagher is that our experience of others is based on apperception. Apperception is a mode of experience in which we perceive something that is not entirely present to us. For example, when we see a mug sitting on the table, we only ever see one side of it. Nonetheless, we perceive the mug in its entirety—we do not understand and interact with the cup as if there is only one side of it to understand and interact with.[121] Similarly for the case of intersubjectivity, Husserl thinks we perceive others based on apperception, that is, we experience them fully, including their physical and psychic components, despite having an incomplete access to their entirety. We perceive others as complex, animate organisms with not only a physical body but an inner life, too—one that we cannot directly experience in the way we experience our own inner life. However, we still associate the inner lives of others to their entirely and can experience it despite not having direct access to it. Whenever I feel sad about hearing of another's loss, for example, this is an instance of apperceiving their inner life.

The third key claim about intersubjectivity is that the apperception of others is based on an automatic association between my experience of my own body and my experience of

[121] Ibid., 183.

another's body. This is what Husserl calls *pairing*.[122] Put differently, we apperceive others via automatically associating our bodies with theirs. The result of pairing is a perceived similarity between one subject and another, namely, between me and another. Notably, Gallagher notes a few things that pairing is not: First, the similarity formed through pairing associations do not emerge from an explicit process of induction or other kinds of rationally based conclusions. Rather, this similarity merely appears to us in experience. Second, pairing and pairing processes are not analogies of any kind which are made between me and another. Pairing is a description of intersubjective experience. Third, nor is this similarity based on how my body looks versus another's. Pairing is a kind of empathy wherein the similarity between oneself and another is experienced *as* an automatic apperception of another's mental life—prior to any interpretation or voluntary decisions.[123] In other words, apperception and pairing are pre-reflective experiences. This means that no extra thinking or active cognition is required to apperceive others.

The fourth key claim about Husserl's intersubjectivity is that the apperception of others via the pairing process can be disrupted by behaviour that is discordant with our narrative scale about them.[124] This idea starts with the natural fact that we partly understand ourselves and others by constructing a sort of story about who we/they are, what we/they do, our/their mental states, etc. Husserl's point here is that the coherence of these stories we develop others specifically can become disrupted by observing behaviour which appears out of line with these constructed narratives. For example, suppose that we apperceive a certain moral character in someone, say, that they vehemently promote animal rights. If at some point we find them shopping for a fur coat at a designer store, then the implicit narrative we

[122] Ibid., 184.
[123] Ibid., 184–185.
[124] Husserl, 'Cartesian Meditations.'

apperceive about their inner life—that they care for animal rights and should not support the commodification of animal-based luxury goods—becomes confused.

§2.2.2. Empathy

In this section, we depart from Gallagher's interpretation of Husserl and move into my presentation of Edith Stein. Intentionality and intersubjectivity are foundational concepts to empathy. Intentionality tells us that our consciousness is characterised as being about the world, and intersubjectivity is the pervasive, complete, and automatic experience of other people in general. Stein's account of empathy takes these concepts one step further by specifying that empathy is the direct experience of another's consciousness—not merely their body or a representation of it. But first, it is important to understand how the way we typically speak of empathy compares with how Stein's does, and why she thinks this.

When we colloquially speak of empathy, we refer to our ability to understand the emotions and attitudes of others such that we can say what they are experiencing and why. Psychologists may approach empathy by studying the neural activity of somebody reacting to another's sadness. Phenomenologists like Husserl as we have just seen, take different approach. Edith Stein is another phenomenologist who offers a strong, sophisticated, and fully developed account of empathy. In her book *On the Problem of Empathy*, which initially served as her dissertation, Stein starts investigating empathy by concerning herself with what 'the awareness of another's experience' is. In phenomenological terms, she asks "what is foreign experience in its givenness?"[125] Notably, at the onset of this problem is the premise that when we are in the presence of another person, their experience is something we can grasp intentionally—that is, it is possible for our own conscious experience to be *about* another's conscious experience. However, having another person's experience be the object

[125] Stein, 'On the Problem of Empathy.'

of our own experience is distinctly more complicated to describe than having a mug be the object of our experience, for example. One reason for this, I suggest, is that our experience of another's experience is volatile and dynamic, whereas our experience of a mug or other inanimate object is stable: Experiences—specifically, those of my interlocutor, but also mine as well—can change rapidly and frequently; a mug can only be meaningful in a few ways—it is half full, empty, dirty, intact, broken, etc, and they rarely change states. In However, this is essentially what makes the problem of empathy, a problem.

Putting it concisely, for Stein, empathy is "the experience of foreign consciousness in general".[126] Empathy in this sense is understood as the foundation of all relevant intersubjective experience. To present Stein's account of empathy, I start by distinguishing between the subject and the object of an empathetic experience. After this, I will distinguish between different types of experiences: The subject is the one who is doing the empathizing, similar to how the subject of any intentional experience is the one who is perceiving. This is the starting perspective point for discussing empathy. The object is then *the experience of another person*; the experience of he who is being empathized about. Notably, this is not the person themselves but merely their experience. Therefore, Stein can be understood to be distinguishing between three variables in an act of empathy: The subject (you; the one who empathises), the object (the experience of your interlocutor), and the interlocutor themself, whom you are empathising about, i.e. the person from where the object thereof originates.

Stein distinguishes between what counts as experience versus content, as well as two important kinds of experiences—primordial versus non-primordial experience. To the first, experience regards the sensations, impressions, qualia, and the like which perpetually and inexorably defines someone's subjective perspective of the present. We may experience a sight, sound, emotion, sensation, having a thought, etc. Experiences are something we

[126] Ibid., 11.

constantly have. But the content of those experiences ultimately explains what is meaningful to us about them, typically, via an intentional relationship between a subject and an object: When there is a bird in my line of sight, I experience a particular visual stimulus, and the content of that experience is essentially made up of the recognition that what I am seeing is a bluejay, or just a bird, more generally. Similarly, when I hear a song, I experience a particular auditory stimulus and the content of that experience is essentially made up of the recognition that this is performative, that this is a tuba, that there is a person's voice, a melody, and so on. When I am sad, I am experiencing a particular emotion, and the content of that experience is essentially made up of my understanding that something bad has happened. Therefore, content pertains to the 'aboutness' of our experiences.

In some cases, the contents of our experiences are accessible to us in the immediate environment. For instance, when I see that bird or hear that song, I can look directly at the bird itself, and I can hear the music directly from its source—from the instruments or from a speaker. In other cases, the content of our experiences does not come from something accessible to us in our immediate environment. For example, Stein investigates the cases of memory, expectations, and fantasy. Primordial experiences are like seeing the bird or hearing the song: In these cases, the content is available to us in the immediate environment and Stein says that these are all "here and now."[127] Conversely, non-primordial experiences do not have their content 'here and now'. Rather, their content can be from the past or entirely imagined. When we remember something from memory, our experience of remembering gets its content from the past—it is about something that happened previously. Conversely, when we anticipate something in the future which has not yet happened but possibly might, our experience of expecting gets its content from those various components which the expectation is about. For example, if I make plans to go to the movies, the content of my

[127] Ibid., 7.

experience in expecting this consist of my friends whom I am watching the movie with, the route I take to get to the theatre, the trailer for the movie I expect to watch, some conglomerate of all these things, etc. Similarly, our experience of fantasy gets its content from something that is likely impossible, such that in this case it is entirely imagined. The content of our experience when we fantasize comes from the mere representation of the objects we imagine—consider the mental images we conjure when reading a fiction novel. Your own internal representation of a particular scene or character, for example, is the content of that fantasy experience.

The shared experience of another which we perceive in an act of empathy is primordial according to Stein—for example, when we perceive the pain of another. The content of that experience, however, is non-primordial.[128] This is because the matter of why my interlocutor is in pain is not directly accessible to me: I did not experience the loss, that injury, etc. myself. Nonetheless, I experience their pain primordially. That is, I experience their present pain within me, here and now. Moreover, my interlocutor's outward appearances which are manifested by their pain are primordial in nature because it too—along with their pain itself—is immediately accessible to me in the moment, namely, by my sight in this case. Similarly, the experience *of* another's joy I feel when I empathize about them is primordial, but this is not the same as primordial joy because the source of joy does not issue live from myself in this case. Rather, it is issued in the other.

Putting things together, Stein concludes that what is shared primordially in empathy is the *experience of* another's pain, joy, etc., but not the *content* of their pain. Thus, we feel in ourselves the pains of another here and now, but we feel it distinctly as their pain, not as ours.

[128] Ibid.

Empathy therefore is "an act which is primordial as present experience though non-primordial in content."[129]

Let us now revisit the cases of memory, expectation, and fantasy respectively to understand what is primordial and non-primordial in these cases. In remembering something, our act of recalling the memory is primordial, but its content is non-primordial. In this case there is a contrast between what the memory is about—a moment in the past—and the subject caught in the act of remembering. Similarly, in expecting, it is the case that the act of expecting is primordial although the content is non-primordial. In this case, there is a contrast between what the expectation is about—some future event or circumstance—and the subject who is expecting something. In fantasy, things look different. There can be no temporal difference between the subject who is caught in the act of fantasizing and the content of that fantasy since the content does not exist at any point in time. However, Stein is still consistent in saying that the experience of fantasizing is primordial to the "I" experiencing it. The content of fantasy, however, is merely in a "non-primordial form of present experience".[130] In other words, the content is still non-primordial because it does not issue from the here and now, but it nonetheless attempts to model what present experience looks like.

Empathy, then, is an act which is primordial in present experience but non-primordial in content. This is because the joy, pain, etc. we feel with another is nonetheless issued from the other and not us. In some cases of empathy, the interlocutor who is being empathized about may bear the content primordially themselves. For example, the audience of a wedding who watches a couple get married in real time and shares the joy of the newlyweds. In this case, joy issues exclusively from the newlyweds because without their own joy from getting married, there is no joy to share. In other cases, the interlocutor who is being empathized may

[129] Ibid., 10.
[130] Ibid., 9.

bear the content non-primordially. For example, someone who shares in the pain of hearing their friend recall something painful. In this case, the hurt friend employs memory recall which, as we have just seen, always bears its content non-primordially. Therefore, in either case of empathy—whether the content is primordial for the interlocutor or not—the content for the one empathizing is always non-primordial as it does not issue from within themselves.

In short, then, empathy is the experience of foreign consciousness in general wherein I experience your mental states primordially, but I do not experience my own primordial mental states since the source of joy, pain, etc. in empathy issues from you and not me. This implies that certain qualities of my consciousness such as my emotions or sensations can be shared between interlocutors in a social setting. So how exactly does this account of empathy according to Stein contrast with other 4E accounts of social cognition? Recall the four suppositions of standard mindreading accounts from earlier—hidden minds, mindreading as default, the observational stance, and methodological individualism. Gallagher suggests that phenomenological accounts of social cognition in general challenge these suppositions. Stein's account of empathy similarly succeeds in opposing them in these ways.

Against the *hidden minds* supposition, phenomenology in general and Stein's account of empathy specifically maintains that emotions and intentions are frequently and normally perceptible by others in embodied and contextualized ways. For example, we can see sadness in the faces of others, and we can see intentions from their posture—consider the posture of someone who is ready to interrupt you during a sit-down meeting, or the posture of someone who is resting in a chair as opposed to working in it. With respect to contextualization, the circumstances in which we see and interact with others alone is sometimes sufficient for understanding why someone is feeling the way they are, or what they intend to do. For example, merely seeing someone in front of a casket at a funeral is sometimes a reliable indicator that they are sad. Therefore, intentions are not hidden mental states and emotions

are not purely mental states. Rather, both are embodied and manifested in perceptible ways.[131]

Following this, against the *mindreading as default* supposition, Gallagher argues that in many everyday encounters, the information we get from context and embodiment alone is sufficient for understanding others. Therefore, theorizing and simulation need not be considered the primary and default means for understanding others. Moreover, experiencing empathy according to Stein's account of it provides relevant contextual and embodied information on its own—experiencing another's pain in yourself is a pre-reflective and direct perception of the another's emotions and intentions.

Against the *observational stance* supposition, phenomenological approaches to social cognition maintain that we understand others within the context of a shared situation, not by standing at a distance from them. In other words, we do not understand others by trying to explain their behaviour and attribute mental states to them from a third-person perspective, but rather, by interactively engaging with others via play, work, etc. More explicitly, according to Stein, empathy is a fundamentally shared experience, not a third-person experience.

Similarly, against the *methodological individualism* supposition, social cognition for phenomenology is fundamentally an interactive process such that social cognition necessarily involves more than one person. Therefore, our ability to understand others cannot be reduced to processes, mechanisms, or mirror neurons located within an individual brain or mind.[132] The definition of interaction that Gallagher references in this case, which I agree with, is this:

> *Interaction:* a mutually engaged co-regulated coupling between at least two autonomous agents where the co-regulation and the coupling mutually affect

[131] Gallagher, 'Phenomenology.'
[132] Ibid., 195.

> each other, constituting a self-sustaining organization in the domain of relational dynamics.[133]

According to this definition, interaction is mutually engaged in that all interlocutors involved are explicitly attending to their shared situation. The interaction is a co-regulated coupling in that all interlocutors dynamically influence the situation by participating in the interaction, and that their active participation influences the interaction itself. Hence, the co-regulation and coupling "mutually affect each other" in a dynamic system. Also in this definition is a strong claim that in some—but not all—cases, interactions constitute intersubjective understanding. They do not merely causally contribute to them. Put differently, if social cognition sometimes occurs merely because of interaction alone, then interactions are more than just a causal element of social cognition. Further, there is evidence across many disciplines to support the antecedent here. For example, brain entrainment research taking place in and between neuroscience and psychology.[134]

Conclusion

In this chapter we have seen how 4E and phenomenological approaches to social cognition compare. The theory theory account of mindreading is not a 4E approach as it comes from classical cognitivism, but it offered future 4E theories of mindreading a way to develop in response to it. It is the theory that we understand others by using an internal theory of how people typically behave to derive hypotheses about what mental states people hold in specific situations according to this theory. Simulation theory instead argues that we do not need to rely on a theory about how other minds work to attribute mental states to others because we already have a mind of our own which can be used to simulate the mental states of others in

[133] De Jaegher, Di Paolo, and Gallagher, 'Can Social Interaction Constitute Social Cognition?'
[134] Scientific American Magazine, 'Synchronized Minds'.

specific situations instead. Notably, some philosophers and scientists think simulation theory allows for an embodied account of mindreading because of the existence and function of mirror neurons—a class of neurons which fire in response to both observing and performing specific behaviours. Others, like Shannon Spaulding, doubt that mirror neurons are philosophically relevant because they are merely contributory causes of action understanding at best, that is, not necessary nor sufficient.

On the phenomenological front, we saw how the concept of intentionality heavily informs the concept of intersubjectivity. The former is the thesis that our consciousness bears a certain relationship to the external world, namely, that consciousness is about the world. Intersubjectivity relies on intentionality to suggest that in social situation that involve other people, our consciousness can be about the other people. According to these concepts—my understanding of which is largely informed by Shaun Gallagher—I argue how Edith Stein thinks this creates a problem, namely, the problem of empathy: People are alive, dynamic, and volatile, whereas inanimate objects are not such that intersubjective experiences about other people entail a unique kind of intentionality that demands special consideration. She maintains that empathy is the presence of foreign consciousness in general such that our own consciousness can be about the consciousness of another in social situations. Therefore, intersubjectivity involves a unique sense of intentionality that can be used to understand our interlocutors.

Chapter 3: How can 4E and phenomenological approaches to social cognition be combined to give the best account of social cognition?

In this chapter I develop the thesis that standard mindreading theories of social cognition are based on an erroneous and unjustified assumption, and that Edith Stein's account of empathy provides strong conceptual grounds for an adequate, alternative account of social cognition that does not make the assumption. An adequate account of social cognition to me is one that provides a clear answer to the problem of how we understand other people. And as we will see, the assumption in question that I argue is latent within standard mindreading theories refers to the implicit belief that observing behaviour is somehow necessary for social cognition.

Theory Theory (TT) and Simulation Theory (ST) are the two popular mindreading accounts of social cognition I accuse of bearing a false implicit assumption. Latent within them both, I argue, is the assumption that one must first observe another's behaviour before they can begin to understand them—that is, before they can begin to 'do' social cognition. In response, I suggest that Edith Stein's account of empathy as described in the previous chapter provides an alternative account of social cognition that justifies social cognition without the need to observe behaviour first. By integrating Stein's empathy into the philosophy of mind, cognitive science, and 4E literature more broadly this way via social cognition, I support the project set out by Shaun Gallagher and Dan Zahavi's in *The Phenomenological Mind* of reviving phenomenology by meaningfully incorporating it into the non-phenomenological literature.[135] Notably, Gallagher and Zahavi are not the only contributors to this project. Therefore, this thesis aims at supporting it by adding something that it is missing: A concrete

[135] Gallagher and Zahavi, 'The Phenomenological Mind.'

theory of social cognition that is fundamentally based in phenomenological thought and supported by other work like philosophy of mind, psychology and cognitive science.

In §3.1 I discuss two reasons why incorporating phenomenology into the social cognition literature is beneficial. In §3.2 I explicate in greater detail the problem of assuming that behaviour is necessary for TT and ST. In §3.3 I show how empathy can support an adequate account of social cognition that circumvents the need to make this assumption. To conclude in §3.4 I address some objections to accepting empathy as an adequate account of social cognition, along with some solutions.

§3.1. Why incorporate phenomenology into theories of social cognition?

The general reason I put forward for incorporating relevant aspects of phenomenological theories into social cognition is that this is a mutually beneficial move. To understand how, let us start on one side by considering current trends in modern cognitive science and philosophy of mind: In the social cognition literature specifically, competitive theories of mindreading are converging towards 4E thought. As discussed in previous chapters, Van Gelder's dynamical hypothesis,[136] the discovery of mirror neurons,[137] and James Gibson's influential notion of affordances[138] are just a few of many early motivating cases for this move away from classical cognitivism (CC). One consequence of this overall paradigm shift, however, is the loss of a definitive epicentre for cognition. In classical cognitivism, the brain held this privilege. This means that all cognitive activity could be traced back to and ultimately found in a definitive spot, namely, in the brain. More specifically, in neurons. However, in light of many new ideas and evidence which suggests that the brain is not in fact

[136] Van Gelder, 'The Dynamical Hypothesis in Cognitive Science,' in Behavioral and Brain Sciences 21, no. 5 (October 1998): 615–28.
[137] Gallese and Goldman, 'Mirror Neurons and the Simulation Theory of Mind-Reading,' in Trends in Cognitive Sciences 2, no. 12 (1 December 1998): 493–501.
[138] J. Gibson, 'The Ecological Approach to Visual Perception: Classic Edition.'

privileged in hosting cognitive processes—strong embodied cognition and the extended mind hypothesis, for example—there is now a sense that something has gone missing. Where is the epicenter of cognitive phenomena now? Is there one at all anymore? What exactly is an epicenter outside the realm of classical cognitivism? Phenomenology can answer these questions. To be clear, this is how philosophy of mind and cognitive science in general can benefit from phenomenology.

The concept of a transcendental "I" gives us a hint to finding something suitable for representing the epicentre of cognitive activity in a 4E, post-CC landscape. To be clear, I am not embracing transcendental subjectivity as true. Rather, I bring it up to underscore something more basic and foundational to phenomenology: The idea that when we turn our attention towards consciousness, we experience something that cannot be wrong. No additional sense of an "I" is needed for my purposes, but it is nonetheless important for arriving at this idea.

The notion of transcendence I use in this chapter traces back to Husserl's concept of the 'phenomenological reduction'. This reduction represents a shift in our attitude towards the world, namely, from what Husserl calls our 'natural attitude' to the 'phenomenological attitude'.[139] To understand the what the phenomenological reduction and ultimately the new plausible epicenter of cognition is, we must first understand what the natural attitude entails.

The natural attitude is, as the name suggest, our standard everyday attitude that characterises how we typically interact with the world. One defining trait of the natural attitude is that we take many specific things for granted. For example, when we drive, we assume that our engine is working properly; when we pay for something, we assume that our

[139] Feist and Sweet, eds., 'Husserl and Stein', Cultural,' 2-3.

cash is valuable; importantly for Husserl, is the assumption that we live our lives within a world that certainly exists externally independently from us.[140]

How exactly do we move away from the natural attitude? It happens relatively often. One example comes from studying science, where we work to describe elements, atoms, electrons, universes, galaxies, etc. that are all either incomprehensibly small or large for us. Nothing about our natural attitude is suitable for describing things at this scale. Why not? Mainly because we do not live in these extreme scales. Our assumptions in the natural attitude are tailored towards life as we experience it in our human scale. So, when we attempt understanding things which exist outside of this practical scale, we put many of our assumptions about how the world appears to work for us aside because these things like the condition of our car, or the value of our cash no longer operate on similar principles at these smaller and larger scales. Therefore, to describe and understand things like atoms or the cosmos, scientists must shift into a different attitude—in this case, a scientific attitude. One way they do this for example is by using the language of special and general relativity to describe our cosmos, and the language of quantum physics to describe atoms. Notably, scientists make assumptions even at these scales; ones that operate instead on relativity or quantum physics, etc. But one must still shift away from our natural attitude to understand them.

On another hand, one might encounter a similar shift in attitude when she works on business, namely, to an attitude of economic accounting. In this case, she might similarly make business decisions according to a different set of assumptions which operate on a different set of principles versus those in her everyday life. The decisions we make at the dinner table about whether to take this job, invest in that project, or move to that country are based on qualitative variables like practicality or passion. But a business decision operates

[140] Husserl, 'The Basic Problems of Phenomenology.'

with a different attitude, namely, a quantitative one, where the best decision is often one that 'makes the numbers work', so to speak.

Even these modifications adhere to a more general framework within our natural attitude.[141] In other words, the attitudes we adopt when conducting science or business are still largely saturated within the assumptions of our natural attitude. So, although we have moved away from the natural attitude, we have not yet arrived at the phenomenological attitude. The clearest example of this is the assumption that we live in a world that exists externally and independently from us. In the cases of science, business accounts, etc., this assumption is still present.

As is commonly mentioned, Husserl makes the shift away from the natural attitude and into the phenomenological attitude by putting the natural attitude 'in brackets'.[142] This means putting our everyday assumptions about external world to the side—especially the assumption that it exists at all—in order to find something more fundamental to consciousness, which is the experience of "I". This marks the first step to the phenomenological reduction—what Husserl calls the *epoché*. To perform the epoché then, we must suspend all our beliefs, judgements, theories, opinions, and assumptions about how the world works and what it is according to the natural attitude, which we have ultimately taken for granted by our familiarity and immersion within it. This is a delicate move: It is easy to take these instructions as a cue to *doubt* our apparent knowledge about the world, pro Descartes; but this is not the move that Husserl has in mind. To properly suspend our beliefs, judgments, theories, opinions, etc., we should merely disregard that they exist within us; to turn them off as if they have never been learned and understood. Again, one of the most important beliefs that Husserl wants us to suspend is the belief in an external world which

[141] Ibid.
[142] Ibid.

exists independently from us. And again, suspending this belief does not mean believing that it does not exist.[143]

One point Husserl makes with the epoché—and the point that I want to underscore—is that once we have bracketed all our beliefs, opinions, theories, etc., the only thing we are left with is our continuing conscious experience of the world. To better understand this, try performing the epoché with respect to any given item nearby. Say, a pen on your desk. It can be anything. You start the phenomenological reduction by suspending your belief in this pen's metaphysical existence. It bears repeating that this does not mean 'I believe that the pen does not exist', but rather, that you put aside the familiar belief that this pen—albeit clearly in front of you—does exist.[144] In this case, you would not hold the positive belief that this pen does or does not exist; rather, in a negative sense, you would lacks any beliefs at all with respect to the pen's existence or non-existence. Notably, the fact that you can no longer answer questions about the pen's composition, causality, and other natural characteristics at this point is not a concern for phenomenology.[145]

So, what is left for you at this point? First, the pen still remains clearly right here in front of you such that you can even describe how it appears to your experience. Second, all there is left to discover from this perspective is whatever comes out of your continuing conscious experience of the pen. This is the one thing which you cannot bracket out because of its pervasiveness and irreducibility. Accordingly, whatever you realise from this experience cannot be *wrong* considering that you have no other knowledge to compare this experience to. Thus is the transparency of consciousness.

[143] Ibid.
[144] If you have ever realised that you are in a dream when you are in fact dreaming, you may be familiar with the corollary decision to conclude that the things you perceive are not real. This is, I think, akin to the apparently awake act of the epoché.
[145] Gallagher, 'Phenomenology,' 44.

There are debates about nomenclature, but it is largely uncontroversial to think that Husserl suggests that this locus of experience we have just discovered characterises the transcendental "I". Considering again that Husserl's goal here is epistemological such that he wants to find the starting point of knowledge, he therefore finds it in our conscious experience. Moreover, Husserl adds to this, saying that the starting point of knowledge is at the "I". However, this is one step too far, at least for my purposes. Rather, we can just say that knowledge starts at conscious experience. We do not need to add an "I". Further, insofar as the process of acquiring knowledge—learning—is uncontroversially considered a cognitive process by philosophers of mind and cognitive scientists, a corollary that follows from this phenomenological insight is that conscious experience can be understood as the definitive epicentre of cognition.

Therefore, social cognition and cognitive studies more generally can benefit from phenomenology by using its foundations in conscious experience as the new epicenter of cognition. Whereas modern 4E trends lack an epicentre of cognition, phenomenology offers an answer to this with the epistemological starting point of conscious experience.

On a separate but notable point, Gallagher and Zahavi correctly identify the core problem motivating TT and ST theories and reveal how it is a non-problem for phenomenology, such that the latter is well positioned to join the mindreading conversation: According to TT and ST theorists, we seem to have no direct access to the minds of others such that we encounter them in the world and in social interactions as theoretical problems that need to be explained. According to the perspective of phenomenology, however, we rather encounter others as embodied interactions with whom we are already meaningfully engaged with by merely being with them. Therefore, we don't need to bridge a gap between ourselves and others via simulation or inferential processes. [146]

[146] Ibid.

On the other hand, how can phenomenology benefit from being incorporated into the social cognition literature? I suggest something pragmatic and political: That incorporating phenomenology into the cognitive science and philosophy of mind literature is a means to re-popularising phenomenology as a discipline in contemporary thought. As discussed in earlier chapters, Shaun Gallagher and Dan Zahavi argue that phenomenology has a lot to offer the cognitive science and philosophy of mind literature despite its underrepresentation in philosophy today.[147] But by underscoring what exactly these potential contributions are and by continuing to discover how phenomenology can help solve problems in cognitive science and philosophy of mind, its revival can be supported by the attention that follows.

Therefore, it is mutually beneficial to incorporate phenomenology with cognitive science and philosophy of mind more generally. In the following section, I take one step further to explicate exactly how we can meaningfully combine the two to create an adequate account of social cognition. To do this, I first identify one problem in the social cognition literature, and then I argue that Edith Stein's account of empathy—based in phenomenology—offers a strong solution to this problem.

§3.2. The problem: An implicit assumption in mindreading theories

Most standard accounts of mindreading implicitly suggest that observing behaviour is somehow necessary for social cognition to occur. I call this the 'observing behaviour assumption' (OBA). Generally, this means that our ability to develop a theory of mind about another person and attribute mental states to them—that is, our ability for social cognition—is contingent on first observing some behaviour from them to inform that theory. In other words, TT and ST theorists seem to implicitly assume that mindreading is only possible in response to observing some kind of behaviour in our interlocutors. In the TT account, this

[147] Ibid.

looks like firstly observing some behaviour in my interlocutor then secondly developing a theory about what their mental states could be, namely, as a product of that behaviour. For example, in the formative 1983 Wimmer and Perner experiment,[148] the children who are tasked with saying where they think Maxi will look for the toy construct their theory by firstly observing her and her sister's behaviour in conjunction. This experiment was designed so that the kids could not report their theories of mind in any other way, and TT ultimately took off from this basic form. In other words, the children in this experiment could not have meaningfully been tested for their ability to form a false belief without first observing what Maxi and Mimi were doing, and this reveals an implicit assumption by TT theorists that observing behaviour has always been somehow necessary for mindreading to occur. Wimmer and Perner may have modelled and restricted their experiment this way so that it was easier to isolate the children's mindreading behaviour. However, what I am suggesting is problematic is the point that this, at best, convenient restriction has not been lifted in continuing discourse around TT.

Similarly, according to ST accounts of mindreading, social cognition still only seems to occur in response to observing behaviour. ST theories that are contingent on the firing of mirror neurons are especially liable for making this assumption. Vittorio's[149] ST account of mindreading, for example, suggests that the firing of mirror neurons is an explicit cognitive signature of mindreading processes. However, recall that mirror neurons fire in response to performing or observing behaviour. Accordingly, ST theories that Vittorio and other endorse have clearly built-in the OBA by relying on mirror neurons to base their conditions for mindreading.

[148] Wimmer and Perner, 'Beliefs about Beliefs: Representation and Constraining Function of Wrong Beliefs in Young Children's Understanding of Deception,' in Cognition 13, no. 1 (January 1983): 103–28.
[149] Gallese and Goldman, 'Mirror Neurons and the Simulation Theory of Mind-Reading,' in Trends in Cognitive Sciences 2, no. 12 (1 December 1998): 493–501.

There are cases of ST in which observing behaviour might not be the explicit cause of mindreading: Later in Gallese and Goldman's paper, they note how simulation can also be used to retroactively predict the mental sates of someone who has already performed an action. In such a case, I might start by inquiring about what someone's desire or goal was that ultimately motivated her to perform a certain action, and then use these conditions to simulate the mental states of the target in that moment.[150] In this case, although the action has already been performed such that we are attributing mental states from the past, there is no requirement that we observe the initial behaviour in order to simulate their previous mental states. In other words, I have simulated the mental states of someone—albeit in the past—without needing to observe and interact with them at all. Therefore, the observation of behaviour was not necessary for simulation to occur in this case. So, is there no OBA here? There still is, because without the initial action according to which we are theorising about the motivation for, there could be no such retroactive simulation to begin with. So, although you may not have observed the initial action according to which we are theorising about the corresponding mental states, without that knowing what that initial action was, this entire unique process of simulation could not occur. Therefore, observing behaviour seems to be necessary for enabling social cognition according to ST accounts of mindreading as well. Notably, because there is no explicit expression of commitment to this belief between TT and ST theorists—for example, by explicitly stating the premise that 'observing behaviour is necessary for mindreading'—it is an implicit assumption. Rather, this belief exists implicitly, hence the OBA.

What exactly is the problem with operating on this implicit assumption? First, as was just mentioned, there is no evidence this assumption is made on purpose. So, it demands investigation because unintentional assumptions in general deserve to be reconsidered if

[150] Ibid.

discovered. Even if there was evidence that this assumption is made on purpose, then one would have to find similar evidence in the literature of every individual account of mindreading to uphold the larger claim that observing behaviour is necessary for mindreading specifically. Another key problem with this implicit assumption is that the claim itself—that behaviour is somehow necessary for social cognition to occur—is patently false in general. As we will see, we often understand others without relying on the observation of their behaviour as evidence for understanding.

Now that we have a reason to investigate this behaviour, in the following two sections I will develop the argument that observing behaviour is not necessary for mindreading to occur, contrary to standard mindreading accounts of social cognition which operate with the BA. In this section I underscore how TT and ST are committed to the BA. In the next section, I introduce one account of social cognition that does not rely on the BA. Specifically, I will show how Edith Stein's account of empathy offers a strong foundation for forming an adequate account of social cognition.

To start, consider how TT and ST would generally explain social cognition in two hypothetical scenarios. Then, I can underscore where the relevant assumptions about behaviour are made and discuss how they are erroneous: Imagine you work in an office and get called in to meet with your manager. But you are not sure why. To anticipate what the meeting is for, you try to understand the mental states of your manager. To do this, you wait to enter her office, then notice her overly formal rhetoric, lack of enthusiasm in greeting you, and in general, cold and closed-off posture. According to TT, you may now begin to suspect that your manager is not in a good mood. Moreover, you build onto this inferred mental state to assume that this means she intends on announcing some negative news to you—say, that you are being laid off. Similarly, according to basic accounts of ST, you use your own mind to simulate what your manager's mental states might be under these detected conditions: You

think to yourself ‘if I were exaggerating my professional demeanor and crossing my arms in front my employee whom I surprised with a meeting, then I likely have something uncomfortable to share’. Further, according to strong ST accounts of mindreading which rely on the firing of mirror neurons, you might be prone to feeling defensive after noticing that your manager’s arms are crossed together, and this serves as a sign of her mental states: Some mirror neurons responsible for crossing your own arms are fired after seeing your manager perform this same action. Even basic folk psychology tells us that crossing arms is an indicator of discomfort and a defensive posture.

In all cases, you have theorized about the intentions of your manager by observing her behaviour. But was this observation somehow necessary for you to understand her intentions? In other words, is it possible to understand her intentions without observing her behaviour first? I argue that observing behaviour is not necessary. It is possible to understand her intentions in this case without appealing to behaviour. To see how, consider that the company you work for has had three consecutive quarters of negative growth. Moreover, the country you work in is amidst a recession. Accordingly, prior to being called in by your manager, you may have already had general worries about being laid off. But when you get notified to meet with your manager, the context of your company and country’s hardship appears to you as a reason for why she called you in. In this case, context played a crucial role in developing a theory about your boss’ mental states—namely, that she intends on firing you. Notably, with context alone, you were able to understand your boss’ intentions in some way. Therefore, observing behaviour cannot be necessary for social cognition if in some cases you can attribute mental states to others without observing behaviour. If observing behaviour was necessary for social cognition, then you could not have been able to infer your boss’

intentions in this case without first entering her office to see her behave. Moreover, because there is no explicit reason given for this assumption, it is implicit.[151]

As we have just seen, this assumption is erroneous because we can still attribute mental states like intentions to others without observing behaviour first. Sometimes, context is enough to afford beliefs about other's mental states. But let us briefly consider another example where observing behaviour is not necessary for social cognition: Your friend has an important presentation coming up, say, he is defending his thesis soon. One hour before his defense, you see him sitting at his desk reading through some notes. According to standard accounts of social cognition, you take this behaviour —the act of reading notes alone at a desk—as a cue that he is focused on a task and does not want to speak to anyone. So, you attribute to him something like the mental state of 'wanting to be alone', and you act accordingly.

What is wrong with this account? Consider that in this case, the decision to leave your friend alone one hour before his defense arose only after seeing him in a seemingly focused state. This is not essentially wrong. However, this is not the only way to arrive at the conclusion that he wants to be left alone—what is wrong is assuming that it is. Others may decide to leave him alone merely by understanding that the hour before one's defense is valuable and is likely being used to prepare. According to this assumption alone, some may decide to not bother trying to find him in the first place. In other words, the context—that he is defending in one hour—was enough to justify a conclusion about your friend's mental state—that he desires to not be bothered. Notably, no observed behaviour was needed to arrive at this conclusion.

[151] At this point, you may think that observing behaviour is still significantly helpful in developing a theory about other minds. This is true and will be addressed shortly.

These scenarios are straightforward and common examples of how we sometimes attribute mental states to others without observing their behaviour first. Accordingly, we can reasonably reject the conclusion—even if implicitly made—that our understanding of others is somehow contingent on observing their behaviour. In making this move, I am notably not suggesting that observing behaviour is unimportant for our ability to mindread. In some cases, observing behaviour is helpful, for example, in cases where you have little context about someone and their situation. Imagine you see a stranger at a mall: The only context you have is that they are at a mall—perhaps they are here to shop? This is a dubious conclusion that could be supported by observing behaviour, like walking into a store. Rather, I am arguing that observed behaviour is a *contributory cause* of social cognition, and not a *necessary cause*. It is not necessary in the sense that we can sometimes successfully attribute mental states to others—the standard marker of social cognition—without having observed any behaviour, for example, by considering the context of a situation instead. And it is a contributory cause in the sense that even if we do have context or some other reason to attribute a mental state to another, then observing their behaviour can still meaningfully contribute to the success of social cognition; by providing us with more information, we can form a more accurate mental state to attribute.

In short, if the OBA is a correct assumption, then there cannot be any situation in which social cognition is achieved without observing behaviour. However, as we have seen with the previous two scenarios, there are cases in which social cognition is achieved without observing behaviour. Therefore, observing behaviour is not necessary for social cognition to occur. Instead, they are at best contributory to successful social cognition.

By arguing that the observation of behaviour is a contributory cause of social cognition rather than a necessary one, a gap is left in the literature: The OBA provided philosophers and scientists with a baseline condition from which social cognition can occur.

Therefore, disproving the OBA comes with the loss of a fundamental principle for social cognition. In the following section, however, I offer a new baseline from which social cognition can occur using Edith Stein's account of empathy.

§3.3. The solution: Empathy

There are two key aspects of Edith's Stein's account of empathy which I will investigate further and build on to present a new baseline for social cognition. The first is her baseline definition of empathy, which is that empathy is "the presence of foreign consciousness in general"[152]. The second is her conceptual roots in Husserl. For Stein, this means that we are in the business of describing reality by starting exclusively from conscious experience, and accordingly, must put any assumed ideas about the external world and its nature aside before starting. In other words, we must perform the epoché to gain knowledge. Considering these two aspects, I will argue that empathy is both a necessary and sufficient condition for social cognition.

I begin this section by arguing that empathy is a necessary condition for social cognition and mindreading specifically to occur. This means that ascribing mental states to others always involves holding my interlocutor as the object of my experience somewhere along that process such that empathy is a foundational, antecedent experience of mindreading. I support this interpretation by underscoring how Stein seemingly begins developing this idea on her own before the term 'social cognition' was prevalent. I ultimately agree with Stein that empathy is a necessary condition for social cognition. If empathy is truly a foundational condition for social cognition to occur, then it can replace the OBA as a necessary condition for mindreading.

[152] Edith Stein, 'On the Problem of Empathy,' 11.

According to what we have currently seen with Stein's account of empathy, we're left with the claim that our own conscious experience is sometimes essentially constituted at least partly by the consciousness of another. It is only *sometimes* this way because we are not always in social situations—that is, we are sometimes alone. Our consciousness is *essentially* constituted this way because my consciousness becomes partly characterized by the consciousness of my interlocutor under experiences of empathy. Stein makes this clear in her description of one example of empathy: "My friend comes to me beaming with joy and tells me he has passed his examination. I comprehend his joy empathically; *transferring myself into it*, I comprehend the joyfulness of the event and am now primordially joyful over it myself."[153] Finally, one's conscious experience under empathy is only *partly* constituted by foreign consciousness because we still retain the indubitable experience of our own personal consciousness under empathy—that is, we do not cease to exist as individuals when experiencing another's consciousness. As Stein puts it:

> The living body cannot be separated from the giveness of the spatial outer world […] When I now interpret [my interlocutor's physical body] as a sensing living body and empathically project myself into it, I obtain a new image of the spatial world and a new zero point of orientation. It is not that I shift my zero point to this place, for I retain my 'primordial' zero point and my 'primordial' orientation while I am empathically, non-primordially obtaining the other one.[154]

Building onto this claim, I consequently argue that one key element found within the experience of empathy is the experience of a semblance of another's mental states, such that social cognition is essentially the act of drawing conclusions about this experience. Put

[153] Ibid., 13. Italics added.
[154] Ibid., 61.

differently, empathy is the experience of foreign consciousness in general, and at least part of what you experience when experiencing another's consciousness is their mental states—their pain, joy, etc.—such that social cognition is merely the act of reifying this experience into a concrete proposition that your interlocutor is hurt, happy, etc. Therefore, empathy does not equal social cognition—this would be circular—but rather, it is the phenomenological foundation upon which social cognition can emerge.

Accordingly, because I cannot meaningfully ascribe mental states to someone without eventually thinking about them, and meaningfully thinking about them entails holding them as the object of my experience—empathy—then empathy must be a necessary condition for social cognition to occur. In other words, empathy is the starting point from which we can begin to understand others. Stein offers some explicit phrasing to support this, in which she suggest that empathy is the means to understanding others: Almost immediately after defining empathy, in the next paragraph, she states that "This is how human beings comprehend the psychic life of their fellows."[155] And a few pages later, while she compares empathy to other experiences like memory and expectation, Stein identifies when empathy specifically occurs: "If we then again concede to the foreign [individual] and ascribe this experience to him, we gain a knowledge of his experience."[156] Notably, the term 'social cognition' was not prominent at the time Stein was writing. However, 'comprehending the psychic life of our fellow' and 'gaining knowledge of another's experience' are synonymous descriptions of how we describe social cognition and mindreading, respectively, today.

What exactly does it mean to hold my interlocutor as the object of my experience? Recall that the object of my experience is essentially the thing which my experience is *about*. To clarify this, I underscore exactly the role that intentionality plays in empathy: Whereas

[155] Ibid., 11.
[156] Ibid., 14.

empathy appears to us as the presence of foreign consciousness *in general*, each practical instance of empathy is characterized *specifically* as the experience of Nathan's, Isabella's, etc. consciousness. Put differently, when empathy occurs, my consciousness in that moment bears a specific relationship with the external world, namely, it is *about* the consciousness of my specific interlocutor. Therefore, in empathy I hold my interlocutor as the object of my experience in that I am experiencing their consciousness within my own consciousness.

Finally, to further strengthen the claim that empathy plays a necessary role in social cognition, consider how it is erroneous to suggest that the opposite case is true—to say that I can meaningfully understand another person without first holding that person as the subject of my experience. This suggests a paradox because we cannot admit to attributing mental states to others without first accepting that we are thinking about that person. Therefore, holding another person's consciousness as the object of my experience, which is the act of empathy exactly, is clearly prerequisite to thinking something concrete about them, such as attributing a mental state to them.

So far, we have seen how empathy is necessary for social cognition to occur: It is the foundational experience upon which we perceive another's mental states, albeit in an unclear and nebulous form on its own. But is it also sufficient for social cognition to occur? I argue that yes, even with empathy alone, social cognition is possible.[157] To understand how, I advance our discussion about the role of intentionality in empathy to describe how this intentional structure is inherently meaningful, such that we can use it to form beliefs and judgements about others and their mental states. In other words, now that we understand how our experience of empathy is essentially an experience *about* other people, we can move on to understanding how exactly the built-in context of these social experiences is inherently meaningful. I argue that meaning is built into the intentional structure of empathy as *context*,

and that this provides enough information to derive judgements about another's mental state. Therefore, empathy is also sufficient for social cognition to occur. However, as I'll explain, any judgements derived through empathy alone are generally unreliable.

Suppose that you are waiting in line to check-out at a grocery store. You turn around and notice someone standing still with a bag of produce in their hand. In this case, the experience of empathy is presented to you the moment you notice them standing behind you—that is, once you perceive their presence and consciousness. It may already be obvious that this person is not merely standing, but standing *in line*. That we can easily recognize this fact about them with such limited information comes from the meaningful context that is built into empathy. No extra steps have been added to realize this. Seeing this person standing still is meaningful in light of recognizing that they are standing still, specifically, in a grocery store and near the self-checkout line: These details represent the context of this situation, seemingly without the need for any deliberation. That is, no extra conscious or cognitive effort is required to make sense of these details here because this information is 'built-in' the situation as context.

If the context were different—say, they are instead standing still behind a car in the middle of the grocery store's parking lot with that same bag of produce in their hand—then we might ascribe a different mental state to them. Instead of thinking that they are waiting to self-checkout, we might instead think that they have just purchased some groceries and want to store them in the trunk. Notably, in this case we have also managed to ascribe a mental state with empathy alone. Moreover, between both cases, only context has changed—which is embedded within the experience of empathy—and yet our judgements of their mental states have changed accordingly with it. Empathy, therefore, provides context along with the presence of foreign consciousness, and this context is meaningful. I do not, in other words, experience another's consciousness as detached from the intentional structure it itself bears

with the world because even their consciousness—like mine—is always about something in the world, and their body—like mine—is embedded in its environment.

Before moving on, I would like to address a relatively small objection that is in the way of understanding what I have argued so far: Standing—whether it is in line or in a parking lot—is seemingly a kind of behaviour itself. This means that we have not achieved an understanding of another's mental states with empathy alone in these cases above. Rather, we have observed some behaviour that assisted us in drawing our conclusions. In response, I distinguish between passive and active behaviour, suggest that active behaviour is meaningful to study, and that passive behaviour is not: Active behaviour refers to behaviour which basically cannot occur without moving one's body, and passive behaviour refers to that which can occur without moving. Moreover, it is intuitive and clear that what scientists want to study when they say they study behaviour is active behaviour. Passive behaviour, like standing in line, may still provide us with meaningful information, but it itself is not meaningful. For example, grasping an object to pick up is inherently meaningful in that the act itself delivers information to an observer about the grasper's intentional states: She picks up that cup because she wants a sip of what's in it. Standing in line is not inherently meaningful since the 'act' of standing does not deliver any information on its own. Rather, information is afforded by pairing this act with context: I know he is standing in line because he is standing *around a self-checkout line*, or *behind a car in the parking lot*. Therefore, it may be true that something like 'standing still' constitutes behaviour, but it is not inherently meaningful such that behavioural scientists would want to study it.

To summarize: Empathy is present upon noticing the foreign consciousness of the person behind you; the experience of empathy in this case is characterized by the fact that your consciousness is at least in part *about* the consciousness of that person behind you, which itself also bears an intentional relationship with the world; and finally, built into this

intentional structure is context. The context in this case is that you notice this person behind you while you are both in a grocery store, in a line, in front of the self-checkout, etc. Putting everything together, empathy and everything it involves offers us a complete account of social cognition. That is, with empathy alone we can successfully achieve an understanding of the mental states of others such that it is both a necessary and sufficient condition for social cognition.

Let us conclude by reexamining the example from before about your boss asking to see you, to better understand how empathy and context becomes social cognition. We can ask: When exactly did I experience the presence of foreign consciousness in this case? What conclusions were draw from thereon? And how did I arrive at them? To the first, there is certainly not a single definitive answer. But let us consider one: Say, that my boss' consciousness appeared to me the moment I read her name in my inbox. Let us assume that I have not read the email subject or its content yet. The first thing I perceive in this case is her name, and with that, her consciousness is imposed onto me according to my understanding that the symbols on the screen refer to the person who is my boss. To the second question, what conclusions could be drawn from this? One is that I perceive the risk that she might want to fire me, considering that I know she is the only one with the power to do so. Now, to the third, how do I arrive at this conclusion? Because recognizing the presence of her consciousness comes with recognizing context—as we just saw in above. In this case, the context is that the only person who has the power to fire me has reached out to me amidst a recent history of poor company performance and a national recession. Equipped with this information—and this information only—I may produce a judgement or belief about her mental states. Namely, that she intends to fire you. Moreover, only empathy—and not the observation of behaviour—is involved.

Between this section and the previous one, I have argued that Edith Stein's account of empathy offers a strong foundation to ground an alternative theory of social cognition. Namely, one which overcomes the flaws of standard ST and TT accounts of mindreading. Whereas ST and ST are widely discussed within the classical cognitivist and 4E literature on social cognition and implicitly operate on the erroneous assumption that observing behaviour is somehow necessary for social cognition, Stein's phenomenological description of empathy on the other hand offers an adequate account of mindreading without making this assumption. It is adequate in that empathy stands as both a necessary and sufficient condition for social cognition and mindreading specifically to occur: It is necessary because attributing mental states to other people always involves holding my interlocutor as the object of my experience at some point throughout that process, which is a definitive act of empathy. Moreover, meaningful context is built-into empathy which alone allows me to form judgements about my interlocutor's mental states. Accordingly, the experience of empathy is also sufficient for social cognition to occur because of its intentional structure which offers enough information to make a judgement about my interlocutor's mental states. In sum, this account, if true, is one concrete way to further incorporate phenomenology into the philosophy of mind, cognitive science, and psychological literature more broadly. Specifically, in the social cognition and mindreading literature. In the following section, I anticipate some objections to the empathy-based account of cognition and then offer replies to them.

§3.4. Objections and Responses

One immediate concern about the empathy-based account of mindreading is that it produces unclear and dubious judgments about the metal states of others. Even if we agree that mental states can be successfully attributed to others by only considering the meaning derived by the context and intentional structure of an empathetic experience, then these afford at best

precarious and low-resolution conclusions about the mental states of others by themselves. Moreover, we usually have access to higher quality information about others—like their behaviour —which can offer more precise mindreading more of the time. Therefore, it is not practical to seriously accept the empathy-based account of mindreading if it is largely unreliable and seldom ever the only way we do social cognition.

In response, I accept these concerns about the performance of empathy-based mindreading, and I agree that they would often produce dubious judgments if solely relied on. There are certainly no guarantees about how accurately one can mindread with empathy alone. However, these concerns apply equally to TT and ST as well such that there is no genuine basis for rejecting only the empathy-based account of mindreading if other accounts are similarly susceptible to this concern. TT and ST accounts of mindreading are both equally unequipped to produce an optimal judgment about someone's mental states compared to empathy primarily because all three—TT, ST, and empathy accounts of mindreading—rely on the act of inference which itself cannot provide a determinate judgement about mental states. Therefore, there is nothing within TT and ST that guarantees full determination about mindreading either, yet this has never posed a threat to taking them seriously. So, it should not be levied against empathy-based mindreading exclusively.

Conversely, one might argue that at least with simulation we are getting a more optimal judgement because of its reliance on mirror neurons which act as an empirical support that is directly associated with mindreading processes. However, we only need to recall Spaulding's critique of the philosophical relevance of mirror neurons for mindreading to understand why this does not offer us much here. Spaulding argues that, at best, mirror neurons are contributory causes of action understanding—that is, they are only relevant in that they can help bolster one's understanding about the actions of another. But whether they naturally increase the accuracy of mental state judgments—as opposed to possibly bolstering

already inaccurate judgements—and by how much, are questions with undefined answers. So although mirror neurons can serve as a contributory cause of action understanding in some cases, the quality of their contributions are indeterminate such that it is unclear whether they offer any meaningful advantage. Therefore, there is little justification to argue that simulation is a more reliable means to mindreading and is the stronger account. Moreover, this means that none of these theories—neither TT, ST nor empathy-based mindreading—guarantee that the mental states I attribute to others are their true mental states.

Let us consider another objection to the empathy-based mindreading thesis: One might argue that empathy cannot explain social cognition in all scenarios such that it is not actually necessary. Specifically, there are cases in which social cognition seems to occur, and yet empathy—in the sense that Stein presents it—is not clearly present. When watching a movie or TV show, for example, we can observe the behaviour of an actor and infer the mental states of the character they are playing based on what we see as an observer. But neither the actor nor the character they play are primordially available to you as an observer. That is, their consciousness is not obviously explicitly present to you since the actor himself is not physically present. Yet, as one might suggest, you can still try attributing mental states to the character. Accordingly, an empathy-based account of mindreading does not seem viable in this case because there is no obvious sense of foreign consciousness that comes through a screen. In other words, empathy seems to become confused and untenable in pretence contexts such as watching characters on a TV screen.

To worsen the situation for empathy in this case, TT and ST are already well equipped to explain how social cognition and mindreading specifically occurs here: Characters in shows act as surrogates for real life interlocutors whom you can virtually simulate to theorize the mental states of by using your own mind as a model. So, if empathy cannot explain how mindreading occurs in all situations while TT and ST can, then it is an inferior theory because

it lacks explanatory power. Therefore, empathy is not necessary for social cognition, and we should not accept it as the grounds for an ideal account of mindreading.

In response, I accept that TT and ST are equipped to explain how mindreading occurs in these cases. But I argue that empathy is too, and that the quality and nature of its explanatory power does not change. It might be tempting to think that there is something unique and irreplaceable about the physical presence of someone such that empathy and therefore the empathy-based account of social cognition is especially contingent on this special trait. However, according to phenomenology, physical presence is not special in this case such that empathy is still present when observing characters in a movie and is identical to empathy when observing someone in front of you: Recall that according to phenomenology and the phenomenological reduction—which is precisely the lens which Stein and I approach social cognition through—what matters most to me and my knowledge is my conscious experience. Accordingly, whether I observe an actor through a screen and perceive their conscious experience or meet with a friend over coffee and perceive their conscious experience, I still recognize that intentionality exists outside of myself. In the case of watching a movie, I can recognize that the actor and their character is having a conscious experience about something in their environment; and I can similarly recognize my friend's conscious experience over coffee. It does not matter where the physical origin of that experience is because that knowledge is still secondary to my own conscious experience. In other words, the fact that an actor had a conscious experience eight years ago on a Hollywood set is equally meaningful to me and my empathy compared to the fact that my friend is having a conscious experience in front of me right now as long as I can perceive that a person is having a conscious experience at all—that is, even by seeing it through a screen. Therefore, according to the phenomenological approach, empathy is present any time I perceive another

person's conscious experience in general; and we can perceive it in many ways such as in person or through a screen.

Moreover, recall how closely Stein's notion of primordial experience is tied to our immediate environment: If an actor whom I am watching a recording of is not in my own immediate environment, how would Stein justify having a primordial experience of their mental states? Basically, an actor's conscious experience is still primordially available when watching them through a video because, regardless of their physical proximity to me, I am still able to recognise and understand the things that this actor is experiencing whenever I am watching them. If the actor is portraying their character as joyful, then an observer can still, in that moment that they see it on screen, recognise this mental state such that it is primordially available to them. Notably, this implies that every single time that we watch that scene, the actor/character's mental states are primordially available again. Put differently, although we may be merely watching a recording of someone such that they are not physically present in our immediate environment, their mental states are still being clearly depicted to us such that their mental states are repeatedly primordially available to us every time we watch that video.[158]

So, empathy is still present when watching actors play out characters on a screen such that it is necessary for social cognition. The fact that I can perceive foreign intentionality and consciousness at all, irrespective of its origin, is enough to constitute a genuine experience of empathy according to phenomenology. Moreover, although the mental states you henceforth attribute to the subjects of those experiences may not be essentially accurate, the solutions offered by TT and ST are equally reliable. Therefore, the empathy-based account of

[158] This point, although small, calls for a serious investigation into whether there is anything irreplaceable about the physical presence of another human. To put it in a footnote, according to phenomenology, there should not be nothing special about watching a realistic movie versus seeing the person themselves before our own eyes. In either case, our experience of another person is equally real.

mindreading is still necessary for mindreading and is at least equally capable of attributing mental states to others when it comes to observing characters through a screen.

Conclusion

This chapter accomplished four things. First, I provided two reasons for why it is worth trying to incorporate phenomenology into the philosophy of mind, cognitive science, and psychology literature generally. One reason is that phenomenology can offer the latter three disciplines a new epicenter for cognitive phenomena in light of their trend of moving away from CC towards extended, 4E thought. Another reason is that phenomenology can benefit from the attention it will receive from contributing to the more popular social cognition discourse specifically.

The second thing I accomplished in this chapter is revealing an erroneous implicit assumption that standard accounts of social cognition latently hold. I demonstrated how this assumption is implicitly made by revealing TT and ST's inability to explain social cognition without someone observing behaviour first. Moreover, I found this assumption to be erroneous by showcasing examples of how social cognition is sometimes achieved without observing behaviour, namely, with context alone.

The third thing I accomplished in this chapter is develop an empathy-based account of social cognition according to Edith Stein's account of empathy. Empathy-based mindreading suggests that empathy is both necessary and sufficient for mindreading to occur such that we do not need to observe behaviour before attributing mental states to others. Moreover, empathy in the sense that I discuss it—namely, according to Edith Stein—is a fundamentally phenomenological concept such that successfully defending the empathy-based account of mindreading implies advancing the project of incorporating phenomenology into the philosophy of mind, social cognition, and psychology research generally.

Finally, I considered two objections to the empathy-based mindreading account of empathy and responded to them both. The first objection suggests that empathy is unreliable as a means to understanding others on its own. In response, I suggest that the competing theories—TT and ST—are equally unreliable as all three accounts of mindreading operate on inference, which is itself inherently unreliable. Therefore, there are no reasonable grounds to reject only empathy-based mindreading because of its reliance on inference. The second objection maintained that empathy is not in fact necessary for social cognition because in some cases—particularly in the case of watching actors on TV—we cannot access the consciousness of others such that TT and ST are the only viable ways of mindreading. In response, I suggest that empathy is in fact still present in these cases because the phenomenological approach cannot discriminate between the presence of foreign consciousness directly in front of you and the presence of foreign consciousness perceived through a screen. In both cases, empathy is present as long as you can perceive that someone is having a conscious experience at all—that is, whether through a screen or right in front of you. Therefore, empathy is still necessary for social cognition as it is equally present in the case of watching TV as it is when having a conversation with someone directly in front of you.

Conclusion

In this thesis I have argued that phenomenology and social cognition can be meaningfully combined to support a novel theory of mindreading that overcomes some problems in standard accounts of mindreading. Specifically, I argue that the experience of empathy as described by Edith Stein is both a necessary and sufficient condition for mindreading to occur, and that thinking about mindreading from the starting point of empathy eradicates any reliance on observing behaviour.

In chapter one, I started by explaining what 4E cognition entails. Sections one to four each explained the four Es respectively. And in the final section, I briefly explained how the 4E research programme can be further supported by embracing phenomenology and phenomenological approaches to research. In chapter two, I compared how 4E approaches to social cognition specifically compare to phenomenological approaches to social cognition. In the first section, I summarized the Theory Theory account of mindreading and then compared it to the Simulation Theory account of mindreading. In the second section, I summarized Edith Stein's account of empathy as a phenomenological account of social cognition. Doing this involved a preamble about intentionality, intersubjectivity, and the relationship between the two. Finally, in the third chapter, I introduced the empathy-based account of mindreading. In the first section, I explained why we might want to incorporate phenomenology into theories of social cognition to begin with. In the second section, I introduced in more detail the assumption that standard accounts of social cognition make—that observing behaviour is somehow necessary for mindreading to occur. Then in the third section I argued that Edith Stein's account of empathy can be used to offer a compelling account of mindreading which circumvents this problem. Finally, I considered two objections to the empathy-based account of mindreading in the fourth section and provided responses to them both.

In total, I have underscored one hidden but pressing issue in standard accounts of social cognition: That they all seem to operate on the implicit but erroneous assumption that in order to attribute mental states to others, we must first observe some kind of behaviour about them. After identifying this problem, I offered a solution: Edith Stein's account of empathy offers a strong foundation for justifying how mindreading occurs, notably, without making the assumption. In doing this, I have provided one concrete example of how phenomenology can be meaningfully incorporated into the philosophy of mind, cognitive science, and psychology literature in general. Looking forward, I continue promoting this approach to studying the mind and cognition, as there are certainly many more discoveries to be found, problems to be identified, and solutions to be offered by adopting it.

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