# The Phenomenology of Twinship: An Investigation into the exceptional intersubjective capacities found in twin-twin social interactions.

A thesis submitted for the degree of PhD in philosophy

By
James William Hoctor

Department of Philosophy
School of European Cultures and Languages
University of Kent

2019

Word Count: 90543

**Abstract**

The overall aim of this thesis is to describe the exceptional intersubjective capacities we find in cases of twin-twin social interaction. Phenomenological approaches to intersubjectivity and empathy provide rich, varying and often competing conceptual resources for such a project, however, the chief focus of these accounts up until this point has been to describe the intersubjective capacities found in the social interactions between single-born persons. Thus, there is a lack of phenomenological literature that is explicitly concerned with outlining intersubjectivity in twins. Yet, recent literature in the sciences of mind as well as first person accounts from twins and their observers, point to important and unique variances in the manifestation of intersubjectivity between twins when compared to the intersubjective capacities of singletons.

In essence, I contend prior phenomenological accounts are underpinned by a concept of passive synthesis or operative intentionality that is too narrow. Instead, I argue that if we are to fully appreciate twins and their social interactions without pathologising twinship, we need to expand these concepts to account for cases of exceptional mutual understanding (EMU) we find between them. In short, I argue that in twins (particularly in monozygotic twins), a more robust passive synthesis or a novel operative intentionality enables the kinds of EMU we find in their relations. Put differently, twins are highly attuned to one another's contextualised expressive bodily phenomena, which means they can directly experience *greater* aspects of their co-twin's mental and emotional life. This novel operative intentionality initially manifests in gestation as a result of a reciprocal and transformative influencing or coupling of each twin's body schema, and continues to develop and form the basis of their interactions throughout their respective lives. This means the primary and secondary intersubjective capacities of twins are highly developed when compared to single-born persons, and this allows them to rapidly exploit the implicit and nuanced narratives they have about each other to immediately grasp one another in the *here and now*.

*In loving memory of Ellen Shortall (née Kiely) (1928-2019)*

## Table of Contents

**Declaration** ... 1

**Acknowledgments** ... 2

**Introduction** ... 3

**Thesis Outline** ... 3

**Chapter 1: Twinship in the Social Imaginary** ... 18

**Introduction** ... 18

**The Social Imaginary** ... 19

**Imagining Twins: Indistinguishable Curiosities** ... 20

**Imagining Twins: Corporeally Conjoined** ... 22

**Imagining Twins: Telepathically Bounded** ... 23

**Imagining Twins: Two Halves of a Whole** ... 25

**Imagining Twins: Theoretical Literature** ... 26

**Conclusion** ... 31

**Chapter 2: A We-Self or Two Selves?** ... 35

**Introduction** ... 35

**Two Conceptions of Self** ... 37

**Narrative Approaches to Self** ... 38

**Conflicting Cultural Models** ... 41

**The Narrative We-Self** ... 44

**The Phenomenology of Doubles** ... 47

**Totalising Twins through Narratives** ... 50

**Minimal Selves** ... 54

**Conclusion: A We-Self or Two Selves?** ... 58

**Chapter 3: Theory Theory and Simulation Theory Approaches to Social Cognition** ... 61

**Introduction** ... 61

**Exceptional Mutual Understanding (EMU) in Twins** ... 64

**Theory Theory** ... 67

**False-Belief Tasks** ... 72

**False-Belief Tasks and Twins** ... 74

**Simulation Theory** ... 80

**Conclusion** ... 85

**Chapter 4: Simulationist and Phenomenological Approaches to Empathy** ... 88

**Introduction** ... 88

**Two Routes to Empathy** ... 90

**Empathy as a High-Level Process** ... 95

**Argument for Phenomenological Evidence** ..... 99
**Phenomenological Approaches to Empathy** ..... 103
**Conclusion: Empathy in Twins** ..... 109
**Chapter 5: Expanding Passive Synthesis for Perception-like Empathy in Twins** ..... 114
**Introduction** ..... 114
**Empathy as Apperception (Presentification)** ..... 115
**The Direct-Perception Model is too Narrow** ..... 118
**Empathy according to Dullstein** ..... 119
**Objections to Dullstein** ..... 124
**How much can be given in perception-like empathy?** ..... 130
**How we Perceive Meaning** ..... 134
**Conclusion: A Robust Passive Synthesis** ..... 140
**Chapter 6: Foetal Body Schematic Development in Twin Gestation** ..... 147
**Introduction** ..... 147
**Passive Synthesis in Merleau-Ponty** ..... 149
**Operative Intentionality** ..... 151
**The Body Schema** ..... 159
**The Foetal Body Schema** ..... 165
**Foetal Body Schematic Development in Singletons** ..... 172
**Foetal Body Schematic Development in Twins** ..... 178
**Conclusion** ..... 193
**Chapter 7: An Interactionist Account of Exceptional Mutual Understanding in Twins** . 196
**Introduction** ..... 196
**Interactionist Approaches to Social Cognition** ..... 198
**The Development of Social Cognition in Singletons** ..... 202
**An Interactionist Account of EMU in Twins** ..... 211
**Conclusion** ..... 224
**Bibliography** ..... 229

**Declaration**

I confirm that the material contained within this thesis has not previously been submitted for a degree in this or any other institution. All the material is the author's own work, except for quotations and paraphrases which have been suitably indicated.

The copyright of this thesis rests with the author. No quotation from it should be published without the author's prior written consent and information derived from it should be acknowledged.

**Acknowledgments**

I am chiefly grateful to Dr Todd Mei and Dr David Corfield for the time, attention, and energy they have devoted to the supervision of this research. Their guidance and the freedom they have given me to truly explore my ideas have been essential in developing this project and bringing it to its completion.

Thank you very much to Dr Anna Bortolan, Dr Anthony Fernandez, Dr Luna Dolezal, Dr William Viney and Mr Federico Bongiorno for the many invaluable discussions concerning this project. I am also very grateful to have had the opportunity to present my work at various meetings of PhiGS—the University of Kent Postgraduate Philosophy Society—and at other academic events across Europe and North America.

I am grateful to the University of Kent for awarding me a Vice-Chancellor's Research Scholarship, which funded the entire 3 years of my PhD research.

I would also like to acknowledge Dr Noel Kavanagh and Dr Sarah Otten, who during my undergraduate studies recognised my raw potential and gave me confidence in myself when I needed it most.

Thank you very much Ms Sarah Shortall for your invaluable proofreading and editing skills.

My siblings: Pauline, John, Mairead and Michael thank you for your support.

My nieces and nephews: Tadgh, Ella-Rose, Emily and Harry thank you for bringing a smile to my face and lifting my mood every day.

This project would not be possible without the many shared and overlapping experiences that my twinship has provided. Thank you to my twin brother, Andrew, for this, and for your unwavering support.

My partner Bríd, thank you for being a rock of support and listening to me even when I sounded a little crazy. You, more than anyone, have truly believed in this project since at least the second time I told you about it!

Finally, to my parents Michael and Sheila. I am incredibly grateful to both of you for the support you have given me throughout my education, and for always trying to do everything in your power to help me realise my potential and to live a happy and meaningful life.

## Introduction

The overall aim of this project is to describe the exceptional intersubjective capacities we find in cases of twin-twin social interaction. The phenomenological tradition provides rich, varying and often competing discourses for such an endeavour, yet, the main focus of these accounts has up until now been on how single-born persons come to understand each other, hence, there is a clear lack of literature that tries to outline intersubjectivity in twins. However, recent literature in the sciences of mind, as well as first person accounts from twins and their observers, point to important and unique differences in the manifestation of intersubjectivity in cases of human existence or being-in-the-world concerning twins.

In essence, I will argue that previous phenomenological accounts are underpinned by a concept of passive synthesis or operative intentionality that is too narrow. Instead, I contend that if we are to fully appreciate twins and their relations without pathologising twinship, we need to expand these concepts to account for the cases of exceptional mutual understanding (EMU) we find between them. In other words, in twins (particularly monozygotic twins) a more robust passive synthesis or a novel operative intentionality presents in their social relations. Put differently, twins are highly attuned to one another's contextualised expressive bodily phenomena, which allow them to directly experience *greater* aspects of their co-twin's mental and emotional life. In terms of an interactionist account of social cognition, this means the primary and secondary intersubjective capacities of twins are highly developed when compared to single-born persons, and this allows them to rapidly and *intuitively* grasp the implicit and nuanced narratives they have about each other to immediately grasp one another in the *here and now*.

Before we get to this point in the thesis, however, it will be necessary for the project to engage with traditional and predominant conceptualisations of twins and twinship; as well as a number of debates raging within analytic philosophy of mind, and phenomenology and the cognitive sciences.

## Thesis Outline

*Chapter 1* engages in a preparatory stage or a pre-phenomenological investigation, which is to make explicit the assumptions associated with the phenomenon we examine, which in turn, opens twinship to investigation.

To make these assumptions explicit, I approach twinship through our Western social imaginary. Simply put, the social imaginary is the background understanding that allows persons to make sense of our shared social world, hence, it accounts for how the average person imagines a given phenomenon.

To illuminate the imaginary of twinship, I examine representations of it in images and narratives. From these, I contend that twins are represented as both mysterious and freakish due to their positioning at the extremes of the values of sameness, closeness and togetherness. Consequently, twins are often depicted as sharing body and mind. Hence, a twin in the non-theoretical literature is regularly imagined as merely a sub-individual, which can only function properly as part of a supra-individual unit.

The thesis then examines academic literature on twins, which reveals a correlation with the conception noted above. Although theoretical literature focuses mainly on personality and social development in contrast to popular culture's fascination with the alleged supernatural capacities of twins, both are nevertheless underpinned by a very similar assumption. That is, the notion that twinship is a result of each twin being a failed self who ends up forming an over bonded supra-individual unit identity with their co-twin. Put another way, it seems to be a commonly held view that the self-other distinction becomes absent or lost in twinship. As a result, twinship is often understood as being pathologically interdependent or as a we-self.

The aim of *chapter 2* is to scrutinise the validity of this view, as if we accept as a presupposition that the self-other distinction becomes absent or lost in twinship, this will have a significant bearing in how we describe intersubjectivity in twins. I argue that this is false. I instead advance the position that the self-other distinction forms the basis for twins' highly entwined relations and is always maintained thereafter. To demonstrate this, it is necessary to give an account of how the notion of the we-self arises. I turn to the philosophical literature for direction. Chiefly, I examine two conceptions of self; specifically, narrative approaches to self, and the minimal self. We shall first concern ourselves with the former, as it can proficiently provide us with the conceptual resources to explore the notion of the we-self.

Twins, like their singleton counterparts, structure their discordant experiences concordantly through narratives. Put differently, a narrative gives temporal unity to experiences and events. Moreover, a narrative is not isolated from its context. It is

situated in a wider socio-historical milieu. Therefore, if we want to understand the we-self, we need to understand it as a notion that is embedded in a wider social and historical community.

Before we can understand the role narrative plays in the manifestation of the we-self, it is necessary to give an account of the normative model of selfhood or what a self *ought* to be. Like chapter 1, this is based upon normative conceptions of selfhood that are Western in origin.

In short, I contend, on the one hand, selfhood is associated with the values of uniqueness, independence and difference, which are contained within a bounded singular body. On the other hand, as we have seen above, twinhood is associated with values of sameness, togetherness and closeness. These models are in constant tension with one another and consequently create a number of contradictions in the narratives that surround twins and their relationship.

I then turn to twins' accounts of autobiographical memory, which demonstrate that they construct a we-narrative in order to give constancy to their abundance of shared experiences. However, I argue that twins do not construct a we-narrative for themselves. In reality, they do so in order for others outside of the twinship to easily understand them. This is because others tend to primarily understand (particularly young) twins in terms of a singular unit identity. To fully comprehend this, it is necessary to explicate the phenomenology of doubles, that is, what occurs when a singleton has an experience of identical looking twins.

In essence, I argue that the experience of twins creates confusion in one's practical experience, because one cannot easily assimilate twins into our normative Western model of selfhood, which is associated with a bounded singular body. This, in turn, leads to the totalising of each twin, in the sense that they are subsumed within the category of twinhood. As a result, their differences are removed, and they are reduced to a singular entity or a we-self.

The totalising effects of the we-self then become the basis of the stories or narratives that singletons (grandparents, parents, siblings, friends) tell about twins. The process then becomes circular, as twins—in order to make themselves comprehensible to

others—construct a we-narrative, which only serves to reinforce the view that they can be understood as a singular unit identity or narrative we-self.

Thus, I claim, it is socially mediated narratives enacted by single-born persons—underpinned by clashing normative models of selfhood and twinhood—which cause many in Western society to conceive of twins as a singular entity or we-self. However, as we will see, twins' first person accounts or self-narratives do not substantiate this view. Rather, many twins see their twinship as a joint enterprise, which incorporates a sense of self and other.

Put another way, I contend along with other thinkers that to occupy a position within a self-narrative requires a conceptual, objective, narrative self that is aware of itself as having a point of view that is different from others. In other words, although a we-narrative is an important and enduring part of twinship, it is not reducible to the self-narrative of each twin. This in my view, points to the limits of understanding other's through narratives and aligns the thesis against the radical constructivist notion that a self is purely the stories we tell about it, or the actions that one executes. As a result, I argue that those who conceive of twins as a we-self or an over bonded supra-individual unit are working with a false or limited account of selfhood.

Curiously, many twin researchers instead of recognising an issue with our general conception of selfhood, place the fault squarely with twins. Or, put differently, twins fall outside the normative model of selfhood, therefore twinship is often considered pathological in nature. I will argue that this is a consequence of the conception that views twins as failed selves who form a we-self or supra-individual unit with their co-twin.

To further dismiss this claim, I turn to the notion of the minimal self, which situates the fundamental structures of the self in the 'mineness' of one's first person experience. As a result, it will become abundantly clear that there is a self-other distinction in twinship, moreover, their highly entwined relations could not arise without this distinction.

Taking this as a presupposition, in *chapter 3*, the thesis then moves to explore until recently predominant approaches to social cognition, namely, theory theory (TT) and simulation theory (ST) to show why these are not suitable for describing intersubjectivity in twins.

The first account explored is theory theory. Generally, TT holds that a symmetry or parallelism exists between self-knowledge and other-knowledge, and it is this that enables us to 'mindread' not only the mental states of others but also our own mental states. In other words, many theory theorists believe that we draw on the same theory of mind to comprehend our own and others' mental states, and thus reject the view that we have a direct non-inferential access to our own minds. Put crudely, because all mental states are unobservable theoretical entities, one has to appeal to a theory when they want to (explicitly or implicitly) infer such and such a mental state they, or others, are in. With the case of our own mind, we merely have become experts at representing our own mental states, thus we are under an "expert illusion" of self-knowledge.

In this regard, twins seem to present an interesting case for TT. After examining first-person accounts of twinship, we can see that they seem to have a direct or a non-inferential access to their own mental states, but they also seem to have, (at least somewhat) of a direct non-inferential access to their co-twin's mental states. Thus, TT allows us to explore the notion that in the case of twins, the "expert illusion" of self-knowledge can be extended to other-knowledge of the co-twin. That is, because they draw on the same theory of mind and spend virtually all of their time together (as children), twins have become experts at automatically postulating each other's mental states.

However, while theory theory accounts do support the idea that we can automatically postulate other's mental states in simple cases, they would reject the claim that we can have an automatic understanding of other's *complex* mental states as this would put too much of a cognitive load on working memory, attention and executive function. Yet, we seem to find such a phenomenon in twins, that is, in their interactions, they can "rapidly" and "intuitively" grasp each other's complex mental and emotional life.

Moreover, if we follow theory theory's logic for understanding exceptional mutual understanding in twins then that would seem to contradict my claim that a self-other distinction forms the basis for twins' highly entwined relations and is always maintained thereafter.

In order to counteract this view, I explore some of the empirical literature that theory theorists draw on to substantiate the claim that there is a parallelism in self-knowledge and other knowledge, namely, false-belief tasks. From this, we see that the aim of these

tasks is to establish at what stage a child can understand that a false belief (i.e. mental state), rather than the state of the world, can cause another person's actions.

To test for this, two types of false-belief tasks have been devised—the Sally Ann task and the Smarties Task. From these, we see that when children are able to recognise that others will have a false belief, they are also seemingly able to remember their own past false beliefs. This forms part of the evidence that supports the claim that we use the same theory of mind (ToM) to understand ourselves and others.

I then turn to the false-belief literature on twins, which is scant. However, although the investigators do not grasp it, the data from their study, if accurate, would seem to contest a central claim of many theory theory accounts. That is, it contradicts the notion that there is a symmetry in self and other knowledge.

In short, although twins in Cassidy's et al. study, had an enhanced specific performance with regards to comprehending the false beliefs of their twin (but not other same age children), they apparently failed to remember their own past false beliefs. This suggests that, at least in the case of twins, they are not relying on a single cognitive faculty to comprehend themselves and their co-twin. In short, it suggests there is an asymmetry between self and other knowledge, which is consistent with my claim in chapter 2.

Auspiciously, one of the rivals to theory theory, simulation theory (ST) seems (at least on the face of it) to endorse such an asymmetry. It claims rather than drawing on a folk psychology to understand others, we instead draw on the direct or non-inferential access we have to our own mental states to (explicitly and implicitly) simulate other's mental states. In other words, we are not under an "expert illusion" of self-knowledge, as ST holds the view that we have a direct non-inferential access to our own minds, and an indirect inferential access to the minds of others.

There are two types of simulation theory, one explicit and the other implicit. With the explicit version, every time we want to comprehend another we introspect, imagine how we would feel and react to a particular situation and then project those mental states onto that person, in order to understand them. However, when we consult twins' accounts, we can see that they rarely try to comprehend each other in this way. That is, as we have seen, rather than to explicitly or consciously mentalise or simulate each other, twins seem to have a mutual comprehension that is rapid and intuitive.

With this in mind, the implicit version of simulation theory seems to be a more promising candidate, because it claims that in many cases, simulation occurs sub-personally and automatically via expressive phenomena. Hence, on the surface, this seems to be more in line with twins' accounts as they claim that a simple gesture can allow for a complex understanding of each other. However, the implicit simulationist account runs into similar problems to that of theory theory, outlined above. This is because it claims that it can only account for simple mental states such as emotions, feelings and intentions, while twins seem to be able to intuitively grasp relatively complex mental states such as (so-called) propositional attitudes.

However, not all simulation theorists would defend the position that there is a sharp distinction between implicit and explicit simulation. Instead, they claim that mindreading or simulation can be roughly automatic, roughly conscious, roughly fecund, and roughly reliable. Debates concerning explicit and implicit simulation are discussed extensively in simulationist approaches to empathy. This is fortunate for us, because twins also report that empathy is central to their twinship. I conclude the chapter by sketching out (EMU) criteria that needs to be satisfied if a theory (or theories) is to account for EMU in twins.

In chapter 4, we turn our attention to the nature of empathy. I examine varying simulationist approaches to empathy to determine if any of these can meet the EMU criteria. I then move to phenomenological approaches to empathy and argue that these accounts are more suitable for describing EMU in twins.

I start by examining Stueber's two route approach to empathy. This, as we will see, encounters many of the same problems outlined with high- and low-level simulation theory in chapter 3. That is, twins can rapidly grasp each other's complex mental and emotional life, which means basic empathy cannot account for complexity, nor can reenactive empathy account for the rapidness in which this happens. However, as noted, not all simulationists would argue there should be such a strict dichotomy between high-level and low-level empathy.

More specifically, I turn to de Vignemont who claims that mirror empathy can be more or less automatic, more or less conscious, more or less fecund, and more or less reliable. From this we are able to formulate a hypothesis which seemingly can satisfy the EMU criteria. However, there are two problems with this account. Firstly, while it does

provide us with some interesting resources for examining EMU in twins, it ultimately does not provide us with enough for an in-depth investigation. This is because de Vignemont does not develop this thesis in her succeeding work. Moreover, upon closer inspection we see that her account does not satisfy all of the EMU criteria. Put crudely, she claims that context is not something that can be given directly (even at the experiential level). This means one must simulate the normatively relevant features to richly grasp the other's emotional state. Thus, it would seem we are confronted with the same problem that we encounter with Stueber's account, because this does not explain how a twin can rapidly and intuitively grasp their co-twin's complex emotional and mental life.

Following this, we see that de Vignemont seems to later reject her earlier thesis as she claims, along with Jacob, that mirror empathy cannot actually be counted as empathy but merely a contagion because one cannot knowingly ascribe an affective state to the target or source. We then further explore these accounts, we see that these thinkers reject the two-route approach to empathy defended by the likes of Goldman and Stueber, and instead claim that empathy is a purely higher-level imaginative phenomenon. However, we see that empathy manifests itself in ways that do not meet the strict conditions formulated by these thinkers.

I then move to outline phenomenological approaches to empathy. From this, we see that phenomenology provides rich and often competing discourses for describing EMU in twins. Moreover, phenomenological approaches to empathy are underpinned by very different presuppositions to those that form the basis for simulation theory and theory theory approaches.

To be precise, in opposition to ST (and TT), phenomenologists oppose the conceptual separation of body and mind, and therefore disregard the idea that empathy is a two-step process, which first consists of a third-person access to observable behaviour, and then, second, a first-person simulation which we ascribe as a mental or emotional state to that behaviour. Instead, we already have a more vital second-person access, which allows us to directly experience the embodied aspects of the other's mental and emotional life. Moreover, in contrast to de Vignemont and colleagues above, these embodied mental and emotional phenomena never occur in isolation of context, in other words, they are always embedded in complex contextualised social settings. However, we see that while

more promising than simulation theory and theory theory, phenomenological approaches to empathy are also limited when it comes to describing EMU in twins.

More precisely, they claim at a basic level that empathy is perception-like or analogous to perception. This forms part of the argument that we can directly perceive the embodied aspects of the other's mental and emotional life. However, while at this elementary level of empathy, we can have an intuitive grasping of the other's experiential life this can only be basic. In contrast, in twins, it seems they can directly perceive or experience the embodied aspects of their co-twin's mental and emotional life intuitively and this is (at least to some degree) sophisticated rather than basic.

The aim of *chapter 5* is to explore the perception-like nature of empathy as defended by phenomenological thinkers, particularly Zahavi and Husserl, to understand why it is limited to a comprehension of the other that is intuitive and basic. The motivation for doing so, as noted above, is that twins seem to have a perception-like grasp of each other's mental and emotional life that is intuitive and, at least to some degree complex. In short, my claim is that the direct-perception model as defended by Zahavi is too narrow and thus cannot fully satisfy the EMU criteria I set out for understanding the exceptional intersubjective capacities we find in twins.

I turn to Monika Dullstein who also contends that Zahavi's direct-perception model is too narrow. However, as we shall see, she contends this for very different reasons. More precisely, she thinks we need to appeal to two views that we find in de Vignemont and Jacob's accounts, if we are to have an adequate account of empathy, namely, the isomorphism condition and the imagination-like nature of empathy. To do this, she turns to Stein's account, and from this, she contends that this phenomenological account can accommodate the perception-like nature of empathy, the isomorphism condition and the imagination-like nature of empathy.

However, her account is not without its shortcomings. Specifically, it seems to overemphasise the imagination-like aspect of empathy while underemphasising the perception-like aspect of empathy. Subsequently, it becomes hard to see what solutions her account actually offers. In other words, her account seems to put forward many of the same arguments presented by others working in simulation theory. Put another way, Dullstein endorses a crude simulationist account of empathy which seems to misappropriate the kind of empathy put forward by Stein.

Hence, rather than appealing to the intuitions of simulation theorists to expand Zahavi's perception-like account of empathy, I contend that we must examine the structures that underpin perception-like empathy if we are to reconcile his account with the EMU criteria.

To do this, I turn to Federico Bongiorno. While his work differs because he focuses on object-perception and delusions, whereas I am concerned with person-perception or perception-like empathy and twins, we nonetheless have a parallel idea in mind, that is, if we work with the notion that passive synthesis must be understood in a strong rather than a weak sense, we will be able to much better understand both phenomena. More precisely, if we recognise, at least in some cases, that a relatively complex understanding of the other's experiential life can be achieved passively and associatively, then we will be able to describe empathy in the case of twins.

I conclude that the Husserl-Zahavi account of perception-like empathy underpinned by a narrow passive synthesis fails to do justice to accounts of twinship. Instead, I contend that perception-like empathy in twinship is underpinned by a robust passive synthesis that enables each twin to have an exceptional ability to intuitively and profoundly grasp their co-twin's experiential life via expressive phenomena, which becomes unambiguous in the context of a shared world. This modified phenomenological account, therefore, satisfies the EMU criteria as by broadening the notion of passive synthesis we will be in a position to describe how it is a twin can rapidly and intuitively grasp their co-twin's mental and emotional life in a manner that is complex rather than basic.

However, some may argue, if it is the case that a more robust passive synthesis presents more frequently and intensely in twin-twin social interaction, and this is merely because they have spent an exceptional amount of time together, why don't we observe the same phenomenon as intensely and frequently in all cases of social interaction where both agents spend an exceptional amount of time together? Hence, more work will be required if we are to sufficiently substantiate this hypothesis.

One way to demonstrate how this robust passive synthesis manifests more frequently and intensely in the social relations of twins, is to carry out a study of the ontogenesis of their exceptional intersubjective capacities. This is achieved in *chapter 6*. To do this, I anchor my account in the work of numerous thinkers starting with Merleau-Ponty.

However, the fact that Merleau-Ponty provides a rich and sophisticated ontogenesis of self-consciousness and interpersonal understanding is not the only reason I turn to him. His work also offers plenty of resources for understanding the nature of passive synthesis, or what he more generally refers to as operative intentionality.

Operative intentionality, or pre-reflective consciousness, for Merleau-Ponty is primarily the intentionality of the body-subject. This manifests as a pre-reflective body schematic intentional substratum, or simply body schema, and thus is the primary way in which we encounter the world and others.

For Merleau-Ponty, the infant does not immediately have a functioning body schema. First, they must learn how to distinguish themselves from others in a stage of development called syncretic sociality. However, recent research on infant imitation shows that contrary to what Merleau-Ponty claims, the infant does already have, from birth, a functioning body schema. However, while his developmental milestones need to be reformulated, he nonetheless offers rich resources for understanding how operative intentionality as the *modus operandi* of the body schema manifests developmentally, and therefore it would be an error to disregard his work.

Following this, I move to explore recent work from the phenomenology of pregnancy, which demonstrates that the gestational mother does not experience the foetus as completely indistinguishable from herself, but rather as a sensory motor being, or a being with a body schema. I argue the same is true in cases of human gestation concerning twins. Hence, it would seem that a functioning body-schema first manifests in gestation.

At this point, it becomes salient that if we are to understand this robust passive synthesis, or novel operative intentionality, it will be necessary to explore the body schematic development of twin foetuses. However, first I will need to anchor my work in accounts that examine body schematic development in singleton foetuses. Jane Lymer offers outstanding resources for this and it is from her work that I develop my own.

Lymer demonstrates that the foetal body schema is initially formed by the habituations of the maternal body schema, which through a process of transformation and reformation in gestation imprints her body schema onto the foetus. By drawing on empirical evidence, she shows that late in the second trimester, the maternal-foetal

relation becomes one of reciprocity and communication because the foetus has developed a functioning body schema. Thus, what occurs at this stage is a body schematic affective coupling or bonding between the gestational mother and the foetus, which sets the foundations for affective relations with adults and older children post-partum. However, while Lymer mentions twins at several points in her work, she fails (like Merleau-Ponty and previous phenomenological thinkers) to consider the significant impact developing alongside another embryonic other in gestation might have on a twin's body schematic development.

Drawing on empirical literature, we shall see that foetal body schema formation is accelerated in twin pregnancy due to inter-twin contact that is originally underpinned and facilitated by the transformation and reformation of the maternal body schema. Once the foetal body schema is formed, twins undergo a body schematic coupling with both the maternal body schema and the foetal body schema of the co-twin. Thus, twin-twin foetal relations from early in the second trimester can be understood as reciprocal, communicative and transformative. However, it is important to note that the coupling that occurs between the foetal body schemas of each twin is still underpinned by the mature body schema of the mother.

From this, I argue that when born, neonate twins are bonded with the mother, and it is this bond that primes them for affective intersubjective relations with older children and adults post-partum. What is more, they are also bonded with their co-twin, and this bond primes them for post-partum affective intersubjective relations with each other. I further support this claim by examining literature on co-bedding in neonate twins, which shows that twins who are put side by side in one incubator tend to thrive in comparison to twins that are not. I argue that this is because they are body schematically coupled or bonded in gestation, and therefore require reciprocal and communicative physical contact with each other in order to have a smooth operative intentionality, which enables further development of the body schema and individual subjectivity.

Taken altogether, this information demonstrates that from early in gestation the developmental trajectory of twins differs significantly from their single-born counterparts. However, at this point in the thesis, I also make a distinction between dizygotic (fraternal) twins and monozygotic (identical) twins, as it seems the thickness of the septum, which separates these different types of twins in gestation, may affect their

ability for body schematic coupling, and therefore the affective bond that primes them for post-partum social interaction with each other.

I conclude chapter 6 by claiming that it is evident that operative intentionality—which is the *modus operandi* of the body schema—has a different developmental trajectory in twins, in particular monozygotic twins. This substantiates my claim in chapter 5 that the exceptional intersubjective capacities we find in twins is enabled by a robust passive synthesis or novel operative intentionality. However, to fully make the claim that this is the case, we continue our study by exploring the developmental trajectory of twins post-partum.

This is the focus of chapter 7 where I anchor my account in interactionist approaches to social cognition. These approaches are heavily influenced by phenomenological accounts; hence, they are underpinned by the same presuppositions regarding the nature of the self and mind that I contend are crucial to comprehending EMU in twins. They also deal extensively with the notion of operative intentionality and thus provide us with more resources for understanding its development in twins. Consequently, these accounts also offer a viable alternative to theory theory and simulation theory approaches to social cognition.

However, like Husserl, Zahavi, Merleau-Ponty and Lymer, interactionist approaches fail to take into consideration the effect a twin may have on the development of their co-twin's intersubjective capacities (and vice-versa) therefore, they fail to fully appreciate the novel way in which operative intentionality develops in twin-twin social interaction. One reason why interactionist accounts may have overlooked the kind of operative intentionality we find in twins is because they tend to draw on literature that only focuses on the infant's social development through their interaction with adults and older children; this is because it is commonly held that development through other same age infants is limited.

The same assumption seems to underpin those twin researchers who claim that each twin's social development is in fact hindered by their twinship. Yet, it becomes clear, rather than formulating developmental outcomes based on research that treats the developmental trajectory of twins as a distinct phenomenon, many of these academics apply research on singleton developmental outcomes as a means of understanding twins. Hence, social development in twins is often presented as merely a poorer form of

what occurs in singletons. As is explored in chapter 1, on this basis, twinship is often fundamentally conceptualised as a kind of psychopathology that inhibits the development of each twin.

Yet, if one examines and reinterprets the developmental literature on the basis that twins are a unique manifestation of human existence or being-in-the-world and that twinship is fundamentally healthy it points to different conclusions regarding their social development. More precisely, we see that, in fact, social interaction in young twins is innovative and allows them to build novel forms of intersubjectivity with one another. Furthermore, this supports my claim in chapter 6 that twins are primed for post-partum intersubjective relations with one another because of the particular nature of their gestation.

Thence, modifications are required if we are to outline an interactionist approach to social cognition in twins. More precisely, I argue that communication between twins does not rely on language and dialogue to the same extent as singletons for higher forms of social understanding because they have already highly developed and novel primary and secondary intersubjective capacities. In young twins, this allows for them to engage in *pre-verbal* cooperative interactions that are far more advanced than the interactive abilities of young, same age singletons. In mature twins, these novel intersubjective capacities mean that they can exploit the nuanced and implicit narratives they have helped each other to shape to rapidly grasp one another's complex mental and emotional lives in the here and now.

This is due to a shared interactive history that has its origins in a mutual influencing of body schemas in gestation, which allows for greater sediments of pre-reflective habitual meaning to be continually built between twins. This means they have a greater attunement to each other's expressive bodily phenomena; a more advanced ability to utilise pragmatic shared contexts in their social interactions; as well as nuanced pre-reflective narratives that they have helped each other to shape. In other words, twins have a second person perception-like access that allows them to directly experience *greater* aspects of their co-twin's embodied and embedded mind. In short, a robust passive synthesis or novel operative intentionality presents in their social interactions, and this is what enables exceptional mutual understanding (EMU) between them. This

is why we do not see a robust passive synthesis or novel operative intentionality manifest as frequently or intensely in the relations of non-twins.

In outlining such an account, this project challenges those twin researchers who conceptualise twinship as an over bonded supra-individual unit or a we-self, and the idea that twins are pathologically interdependent. In my view, these thinkers have made these claims because their theoretical accounts of twinship are underpinned by a singleton bias, that is to say, they try to place twins within a theoretical framework for understanding singletons rather than treating twinship as a unique manifestation of human existence or being-in-the-world, which is fundamentally healthy. This means, when twins do not meet the outcomes set based on singleton theories and research, these thinkers, rather than reassessing the theories they utilise, claim that twins and their relations must be in some way lacking.

In challenging these mis-conceptualisations and providing an alternative account of twinship, this thesis contributes originally to contemporary debates concerning the nature of the self; the limits of narrative understanding; the nature of the mind; the nature of empathy; the nature of social cognition and intersubjectivity; the nature of passive synthesis, operative intentionality and the body schema; and the phenomenology of pregnancy. Thus, this thesis not only challenges predominant assumptions in twin research, but also originally contributes to numerous debates that can be found in phenomenology and the sciences of mind.

# Chapter 1: Twinship in the Social Imaginary

*Identical twins are, so to speak, the same individual of whom two copies have been printed (Rostand, 1971, cited in, Farmer, 1996, p.45).*

## Introduction

The aim of this project is to describe the exceptional intersubjective capacities we find in twin-twin social interaction. However, first it will be crucial to engage in a preparatory stage or a pre-phenomenological investigation, which is to make explicit the assumptions associated with the phenomenon we shall examine, which in turn, will open twinship to investigation.

In order to uncover these assumptions, I approach twinship via the social imaginary. Simply put, the social imaginary is the background understanding that allows us to make sense of our shared social world. Hence, the social imaginary takes account for how the average person imagines a given phenomenon.

To shed light on the imaginary of twinship, I examine representations of it in images and stories. From these, I argue that twins are represented as both exotic and freakish due to their positioning at the extremes of the values of sameness, closeness and togetherness. Consequently, twins are frequently portrayed as sharing body and mind. Thus, a twin in the non-theoretical literature is imagined as merely a sub-individual, which can only function properly as part of a supra-individual unit.

The paper then examines theoretical literature on twins, which reveals a correlation with the notion outlined above. Although academic literature focuses mainly on personality and identity development in contrast to popular culture's obsession with the alleged supernatural abilities and capacities of twins, both are nevertheless underpinned by a very similar assumption. That is, the notion that twinship is a result of each twin being a failed or split self which results in a single entity, supra-individual or we-self. Put differently, there is a common view that the self-other distinction becomes absent or lost in twinship. As a result, twinship is often understood as being pathologically interdependent. The aim of the next chapter will be to scrutinise the validity of this view, as if we accept as a presupposition that the self-other distinction becomes absent or lost in twinship, this will have a significant bearing in how we describe intersubjectivity in twins.

## The Social Imaginary

To uncover the assumptions surrounding twins and their relations it will be necessary to first outline the general conceptual and imaginative landscape that surrounds the phenomenon. To do this, I approach twinship in terms of what has been called the social imaginary. In his book *Modern Social Imaginaries*, Charles Taylor explains the social imaginary as the ways in which people imagine their social existence; how they fit together with others, how things go on between them and their fellows, the expectations that are normally met, and the deeper normative notions and images that underlie these expectations (Taylor, 2004, p. 23). It is important to note, that for Taylor, the social imaginary is not simply a cluster of intellectual ideas we employ when we think about social relations. It is not an explicit social theory, but rather it is what underpins our formulating of such theories. It determines which questions we can meaningfully ask about our social existence (and which we cannot ask), and it affects the ideas we form.

The social imaginary is intended to capture the "wider grasp of our whole predicament" that grounds even our background understandings of our values and social practices. Taylor outlines practises as "something extremely vague and general […] any stable configuration of shared activity, whose shape is defined by a certain pattern of dos and don'ts, can be a practice" (1989, p. 204). Social practices are not isolated islands or unconnected ways of doing things, for most practices only make sense in their relations to other practices, and there is often a common cultural form to how people comport themselves in different social practices. In other words, social practises represent the normative values by which one conducts themselves in wider society. Our normative values or practises are held together by a common understanding, and this common understanding is what the notion of the social imaginary is supposed to capture.

Put differently, the social imaginary is the conceptual or imaginative landscape that gives us a background understanding, which in turn, allows us to comprehend how to be in our shared social space (Taylor, 2004, p. 26). Therefore, if one wants to understand how society tends to think of a particular phenomenon, it will be useful to turn to the social imaginary to shed light on it.

Taylor uses the term 'imaginary' because he focuses "on the way ordinary people 'imagine' their social surroundings, and this is often not expressed in theoretical terms, but carried in images, stories, and legends" (Ibid., p. 23). In the following, we will

examine narratives and visualisations of twins and their relations; as a result, three values associated with twins become explicit, namely, sameness, togetherness and closeness. In themselves, these values do not represent the assumptions that surround twinship. Rather, these become clear once we determine where twins are located vis-à-vis these values—that is to say, at their extreme.

However, before we proceed, I wish to make it clear, that I am not operating with the idea that there is a single shared social imaginary relating to twinship, which influences everyone's understanding of twins in much the same way. Ideas about twinhood tend to be culturally variable, and therefore in the following I limit my discussion to theoretical and non-theoretical literature that is Western in origin.

**Imagining Twins: Indistinguishable Curiosities**

In relation to sameness, Karen Dillon argues that "the cultural fascination with twins hinges on the visibility of their similarity" (2011, p. 63).

This is exemplified in Shakespeare's *Comedy of Errors,* which is based on the play *Menaechmi* by the Roman playwright Plautus. A humours comedy about mistaken identity, it tells the tale of two twin masters and two twin servants, who 33 years after their separation as infants, end up in the Greek city of Ephesus. The story regales the extraordinary mishaps that occur when one of the twin masters and their twin servant encounter the family and friends of their co-twins. This leads to arrest, unjust beatings, near-seduction, and wrongful accusations of insanity, demonic possession, theft and adultery (Shakespeare, 2016). Indeed, it is precisely because of the apparent indistinguishable similarity of its protagonists that these wild mishaps occur.

It is not just limited to this; there are many examples of twins portrayed in our Western social imaginary as indistinguishable due to their apparent physical and behavioural similarity. As Kate Bacon highlights:

> Roger Hargreaves' *Little Miss Twins* are exact replicas of each other. A picture of the two twins dominates the front cover where they mirror each other's actions perfectly. Turning onto the first page, the association between twins and sameness is confirmed, the opening line declares: 'You just couldn't tell them apart!' Similarly, Lewis Carroll's 'Tweedledum and Tweedledee' are identically dressed schoolboys who wear name tags (on the collar of their shirts) to make their identities clear (2011, p. 32).

We assume and expect twins to be the same: to have indistinguishable bodies, behaviours and matching clothes. Hence, if people look alike, we might say they "look like twins!" (Ibid., p. 33).

Elizabeth Stewart, as part of her sociological analysis of twinship conducted two different studies of how people conceive of twins in Britain. The first was a survey for parents of twins, administered to 100 parents who attended conferences and focus groups organised by the Twins and Multiple Births Association (TAMBA). The second was a street-delivered survey in London and Oxford, aimed at members of the wider public. The view that became vastly apparent from both studies was that we think of twins as being indistinguishable from one another:

> The basic assumption seems to be that twins are (or, some argue should be) identical and that twinship by its very nature involves two individuals who are the same, who look alike, who wear the same clothes. The association of similarity or 'identicalness' with the word twins, as well as the images of twins being largely appearance based, was revealed (Stewart, 2005, p. 129).

We can see this view manifest in the socialisation process of infant twins. Alessandra Piontelli points out, as infants: "Appearance certainly plays the largest part in the special charisma of twins. Parents could not resist the lure of dressing their twins alike" (2002, p. 108). Having twins in a Western society is looked upon with positivity and hence, "few [parents] could resist the temptation of achieving albeit indirectly, this special status [parents of twins]. In order to attract this special status twinning had to be maximised" (Ibid.). Much research has highlighted that young monozygotic twins and same-sex dizygotic (fraternal) twins are likely to be dressed the same (Koch,1966; Cohen et al., 1975; Robin et al., 1994).

This is also a point Dillon highlights in her work. Drawing on the photography of Diane Arbus, Mary Ellen Mark, and Harvey Stein, she demonstrates that, twins are marked as socially and physically unique due to their perceived extreme sameness (Dillon, 2011, p. 36). However, as she makes clear, although there is a physiological aspect, similarity is also performative as twins trapped under the "gaze" of others are expected to enact and enhance their sameness. Dillon also examines a host of literary texts, which include Joyce Carol Oates's *The Lives of the Twins* and Eudora Welty's *The Golden Apples*. In so doing, she reveals the darker side of sameness in twins. These "cultural vehicles depict twins as almost inhuman in their similarity" (Ibid., p. 16).

As mentioned, the social imaginary incorporates some sense of how we all fit together in our shared social practices, and such understanding is simultaneously factual and normative (Taylor, 2004, p. 24). As such, the social imaginary concerns the 'oughtness' of practical life. Put differently, it represents the normative values of everyday experience, thus it enables us to commonly grasp the *do's* and *don'ts* of lived human existence. As we can see, twins do not represent the normative view of sameness; on the contrary, they very often seem to represent its extreme. Bacon points out, "this construction of twinship serves to position twins outside of the cultural category of the person; defined through sameness, twins are assumed to lack individuality" (Bacon, 2011, p. 35). In other words, due to their physical and behavioural similarity, which is greatly magnified by the performative aspect of sameness, twins are considered to be sub-individuals.

**Imagining Twins: Corporeally Conjoined**

Bacon's work points out another value, which also greatly contributes to this conception of twins—togetherness:

> So intertwined are the notions of twinship and togetherness that 'twins' (rather than brothers, sisters or siblings in general) may be used as metaphors for togetherness. As such, we may talk about 'twin towns', 'twin buggies' and 'twin towers' (Ibid., p. 39).

Indeed, in both the *Comedy of Errors* and *Menaechmi*, the value of togetherness is illustrated in the reunification of the protagonists, which allows order to be restored to the lives of the twins, as well as, their friends, families, and broader society (Fantham 1968; Shakespeare, 2016).

An article by the *Daily Mail* also highlights the association of togetherness with twins. Infant twins had been separated for two years because one had been severely ill: "Celebrating their second birthday was a particularly special occasion for Elizabeth and Sophie Rae […] For at last they were *together*, as twins should be" (Andrews, 2009, np, my italics).

Children's stories concerning young twins depict similar views. For example, the back cover of Jacqueline Wilson's *Double Act* tells us that: "Ruby and Garnet are ten-year old twins. Identical. They do everything together" (1995, np). Similarly, the first few lines of *The Cherry Twins* state:

> Charlie and Cheryl were cheerful little cherries. Both were full of fun and chatter and were never apart. They were twins you see. They did everything together. They even spoke at the same time (Fisher, 1983, p. 28).

It seems, to have twins portrayed as cherries, which are fused together by a stem, is no accident. As Moses's poem, *Twins,* puts it: "We're hard to pull apart[...]We stick to each other like glue" (1993, p. 23).

In other words, twins represent togetherness, so much so that they are perceived to be 'stuck together' (Bacon, 2011; Davis and Davis, 2010). Dillon also points to this notion of conjoinedness as a consequence of placing twins at the extreme of togetherness:

> The predominant image of twins in photographic collections of twins or photographs of twins included in larger collections depicts them identically dressed, posed symmetrically side by side, as if one is looking at a doubled image. With twins' bodies visually connected, sometimes literally intertwined, these photographs evoke an image of conjoinedness (2011, p. 29).

Again, Dillon points to the more sinister aspects of togetherness as represented in twinship. The photographs of twins she examines, largely, and unconsciously, endorse viewers' "imaginings about twins' freakish identicalness and intimacy already established by a larger narrative recycled in mass culture of twins always together and physically conjoined" (Ibid., p. 30).

Once more, twinship seems to transgress normative views regarding togetherness and therefore it is located at its extreme. As a result, instead of imagining two separate beings, we conjoin or 'stick together' twins' embodied identities, thus, reducing them to a singularity. This is evident in the photographs, as once again, twinning had to be maximised. As Dillon points out: "Photographers create an image of conjoinedness by magnifying the similarities in clothing, hairstyle, and pose in part manufactured by the parents" (Ibid.).

Placing twins outside of the norm by locating them at the extreme of sameness and togetherness is not the only way we represent twinship as a singularity. As we will see in the next section, the location of twinship within the value of closeness also facilitates this view.

**Imagining Twins: Telepathically Bounded**

Closeness is another value that is strongly associated with twins. As Barbara Schave-Klein elucidates, "popular culture often portrays twins as having the ideal intimate

relationship", or as "icons of emotional closeness" (2003, p. xvii). Twinship is imagined as comprising an emotionally close relationship, in which each twin's needs and feelings are habitually met and understood by their co-twin. Identical twins are thought to be particularly close. As Pearlman and Ganon note:

> The twin bond is often stronger in identical twins than it is in fraternal twins – identical twins share the same genes and chromosomes and have similar interests and temperaments. Like all children, identical twins are very focused on their own needs, but unlike non-twins or fraternal twins, identical twins tend to be more aware of each other. Identical twins often establish and maintain a close social profile (2000, p. 85).

The psychotherapist, Joan Friedman, calls this perception of closeness in twins the 'twin mystique':

> Stereotypically, most people think of twins as intensely close soul mates connected to each other through a kind of sibling ESP [extra-sensory perception]. Many of us assume that one twin not only knows what the other is thinking and feeling but can automatically provide what the other needs. Twins are seen as inhabiting their own private world for which only they hold the map (Friedman, 2008, p. 4).

In other words, twins are perceived to share such a close relationship that they can engage in parapsychological phenomena.

This popular conception of twins will be challenged at a later stage in the project. I will argue once we place twins in the context of modified phenomenological and interactionist accounts of intersubjectivity that far more reasonable and logical descriptions become available for the exceptional intersubjective capacities we find in twin-twin social interaction. However, for now our aim is to outline the assumptions associated with the phenomenon of twinship in order to open it up to such a phenomenological investigation.

Betty Case calls the parapsychological aspect of twinship the "exotic" and notes, "ESP in the lives of twins exhibit a psychic relationship which is far from being understood" (1991, p. 117). Rupert Sheldrake, the biologist and researcher of morphic resonance, believes that, because twins' relationships are lifelong, they "provide some of the best opportunities for studying person-to-person telepathy" (2002, p. 8, cited in, Viney, 2013, np). Therefore, similarly to the imagining of conjoinedness in twins as a consequence of extreme togetherness and sameness, twinship within the social imaginary also seems to constitute the extreme of closeness, as twins seem to have a

paranormal access to each other's thoughts and emotions. Again, Dillon points to the disturbing undertones associated with this view of twins:

> Images of twins as clones who speak and act in unison, who share an almost incestuous closeness, and who maintain an insularity that involves, among other aspects, a private twin-language or psychic connection are prevalent stereotypes of twinship in mass culture. Sherri and Terri, the purple-haired twins from The Simpsons, speak to each other in their private twin-language […] [T]he final scene from an episode of Law and Order: Special Victim Unit shows twins in separate yet adjoining interrogation rooms with their hands and heads on the wall as mirror images, sensing each other's presence and communicating non-verbally (2011, p. 25).

Just like sameness and togetherness then, closeness as we imagine it in twins contravenes normative expectations. As a result, twins are not just imagined as corporally conjoined, they are symbolised as cognitively bounded via some form of telepathy or extra-sensory perception.

Put differently, twins are depicted as sharing a mind, which again denotes twinship as a singularity. For instance:

> [In] 'Rugrats', […] we see that, unlike the other characters, different-sex twins Phil and Lil are depicted as sharing one thought bubble, implying that they either know what the other is thinking, have the same thought or actually share their thought (Bacon, 2011, p. 34)

Within the social imaginary twins and twinship instantiate the extremes of these values, so much so, that we very often conceptualise them as transgressing what is considered the norm. Consequently, twinship signifies the dual bonding of two subjects into a singularity, that is, twinship is imagined as both corporally and cognitively singular. Hence, as Stein puts it, "There is a prejudice about twins. Twins are one" (1978, p. 13).

**Imagining Twins: Two Halves of a Whole**

The notion that twins can be understood as a singular entity is rampant within the social imaginary. As Stewart's sociological analysis illustrates, the primary "social perception" of twinship is that it consists of a "supra-individual unit" (2005, p. 169). Irrespective of zygosity people expect identical and similar looking fraternal twins to be half a person, with each half having different, often complementary, characteristics (Stewart, 2005, p.60; Bacon, 2011; Davis; 2014), and thus for many, twins are "individuality-burdened freaks of nature" (Maddox, 2006, np). Dillon's analysis of *The Lives of Twins* again unearths the ominous undertones associated with this singularity:

> The final scene confirms that [the] twins, monstrous in their likeness and impossible to tell apart, pose a psychological threat to the sense of self. Reiterating the Jekyll/Hyde subtext, their twinship dissolves into a strange conjoinedness in which Jonathan and James are two sides of the same person (2011, p.47).

As already mentioned, the social imaginary concerns the 'oughtness' of practical life. It would seem then, that very often twins are located at the extreme of the values of sameness, togetherness and closeness, hence, twinship habitually represents the *do nots* of these values.

In short, twins and twinship apparently undermine the established order. In allegedly contravening normative expectations of the individual, literary and visual depictions imagine twins as supernatural, and twinship as monstrously singular, due to each twin being in some sense, physically conjoined and cognitively bounded. In other words, a twin is imagined as half a person or sub-individual making up part of a larger whole or supra-individual unit.

As touched upon, for Taylor, the social imaginary is not simply a theory, but rather informs our formulating of theories. In what follows, I argue that this depiction of twinship in the non-theoretical literature correlates with academic accounts of twins, and so is firmly rooted in the social imaginary. Thus, it will become clear if we are to investigate the phenomenon of twinship and the intersubjective capacities of twins, it will be necessary to do so by first exploring this conception of twinship.

**Imagining Twins: Theoretical Literature**

If one examines the theoretical literature on twinship they can find—to a greater or lesser extent – correlations with the imaginary of twinship outlined above, which would seem to suggest that the social imaginary does inform such theories.

An example of this is highlighted in the work of Jay Joseph. A prominent critic of behavioural genetic approaches to personality development, Joseph scrutinises a host of research on identical or monozygotic twins separated from an early age and reared apart—including the influential Minnesota Study of Twins Reared Apart (MISTRA). The basic idea behind this research is that monozygotic twins removed from a shared environment provide the perfect natural experiment for investigating the impact of genes on psychological traits (Joseph, 2001, 2004, 2015).

He outlines a wide range of criticisms of these studies, but it is one in particular that is relevant for our purposes, namely, there is a similarity bias in how many of these researchers recruited their subjects and interpreted their subsequent data. As he notes with regards to MISTRA: "genetic biases influenced the way they interpreted MZA data and pointed to their tendency to highlight behavioral similarities and downplay differences" (Joseph, 2015, p. 121). Indeed, he thinks one reason for this is that researchers can be "taken in" not only by twins, but by their own pre-theoretical biases, citing Shields he claims:

> It could be objected that almost any pair of individuals will be alike in some odd way and that it is all too easy to pick on such coincidences and to exaggerate others so that the twin investigator is easily taken in (1962, p. 98, cited in Ibid., p. 57).

Crudely put, the basic assumption that seems to influence this body of work is correlated to one we find frequently in the social imaginary, that of twins being so extremely similar that they lack individuality.

Moreover, this pre-theoretical notion not only seems to have influenced this research but is also reaffirmed and reinforced by it. This is because many of the more spectacular cases of similarities between twin subjects separated and reared apart found widespread attention in the media, as journalists tended to sensationalise these stories, emphasising these twins' similarities while toning down their dissimilarities (Ibid.). Indeed, many of the twin subjects were quite happy to participate, as Joseph notes, "some [twins] who had previously led uneventful lives enjoyed their celebrity status which in some cases included television talk show appearances and having book chapters written about them" (Ibid., p. 56).

These correlations between the academic and non-academic literature are not just limited to the example above; indeed, if one examines other theoretical accounts of twinship even more explicit correlations can be demonstrated. However, while the non-theoretical accounts depict these via the alleged supernatural capacities of twins, academic literature often represents these by pathologising twinship. Or put differently, it outlines apparent issues with personality and identity development in twins. Thus, a large body of research emphasises that a twin's 'failure' to achieve 'the ideal' sense of self can be attributed to their twinship.

For example, ego psychology in psychoanalytic theory has explicitly concerned itself with the individuation process in twins. It argues that the process of individuation is one all children must ideally pass if they are to achieve personal autonomy (Safyer, 1994). However, twins seem to present a number of problems for this theory. Thus, researchers like Marjorie Leonard claim every twin's emotional disturbance more or less stems from the fact of their twin relationship (1961, p. 301). In her paper, she investigates the nature of inter-twin identification, and reasons for its possible pathogenic influence on the development of personality. As a result of her observations, she claims that the inter-twin relationship diverges from most other interpersonal relationships because of certain features particular to inter-twin identification. She elucidates: "These factors include the fact that inter-twin identification is usually mutual, reciprocal, of more or less equal intensity" (Ibid., p. 306); and equally, that the relationship is with someone at the same degree of development rather than with an adult or older sibling. She demonstrates how a twin, like any single-born person, goes through the process of separating from the primary caregiver and becoming aware of themselves as distinct from them. However, unlike single-born persons, a twin must, because of the essential and necessary inter-twin identification, also separate from their twin. In other words, the twin must go through a dual process, separating from both their mother and their co-twin.

Leonard speculates that each twin, in the first few weeks of their development, to the extent that they are aware of the other, experiences a sense of oneness (as opposed to separation) which results in a state of "psychological syncytium", a condition that precedes an awareness of body boundaries (Ibid., p. 307). As we can see then, the representation of twins being in some way corporeally conjoined is not just a view located in non-theoretical imaginings, it is also present in academic accounts of twins. This as we will see, is a claim that I will later come to contest, as I will argue in chapter 6, twins have a rudimentary sense of embodied ecological or situated selfhood which they develop before they reach the neonate stage of development—namely, in gestation.

However, for the present, our aim is to draw correlations between the theoretical and non-theoretical accounts of twinship. In Leonard's account, if a twin is to view him or herself as distinct or separate from their co-twin, sensory perception must mature: the infant twin will then perceive their co-twin as in some way distinct, rather than as an

extension of themselves. However, for Leonard parallelism in behaviour, which exists in any two infants of the same stage of development, must contribute many similar instances in which one twin perceives the other as though observing himself in a mirror. Conversely, he is likely to think his own mirror image is his twin (Ibid., p. 308). In other words, twins conflate their embodied identities due to their sameness.

For Leonard, throughout the early years of childhood, the inter-twin relationship is thus characterised by the twins' inadequate differentiation, that is, by a process in which the twin may only gradually distinguish between unity with one's twin and discovery of themselves as separate from one another. As a result:

> Confusion of identity [or self] is one of the results of the primary inter-twin identification. It has a serious effect on the further development of the personality, since it must necessarily cause a retardation in the development of the ego (Ibid., p. 304).

Many researchers agree that identity formation, stemming from the individuation process, or to be more precise, from the dual individuation process, creates a number of complexities for twins (Burlingham, 1952; Joseph and Tabor, 1961; Lewin, 2014, 2016). Twins, especially identical twins, are commonly said to find this task more difficult in comparison to other children.

Hence, it seems the academic literature - to at least some extent - correlates with the notion we find in the non-theoretical literature, that is, a twin does not satisfy normative expectations of the individual. Ainslie's (1997), Schave-Klein's, (2003) and Davis's (2014), research demonstrates, due to so-called unsuccessful individuation or "failure" to form a separate identity, many academics seem to think that a twin can be understood as a "failed", "incomplete", or "split self". For these researchers:

> These dilemmas stem not only from the confusion of each twin's identity but also from the nature of their relationship and the co-contemporarity twins share in early life. Looking alike combined with constantly being together leads to the conflation or collapse of each twin's identity into an over bonded, singular, or unit identity (Davis, 2014. p. 35)

Twins in essence are, "two pieces of a jigsaw puzzle each needing the other to feel complete" (Sandbank, 1999, p. 177). Thus, thinkers such as Lewin claim, in twins, the "sense" of "self" is more or less shared, or the boundaries between each twin is "less clear" (2016, p. 36; see also, Schave and Ciriello, 1983). Due to the bond between them being symbiotic, each twin regards the other as being situated within a common

boundary (Terry, 1975, p. 124). As a result, twins are widely characterised as closed societies of two (Kamin, 1974); or as problematic, "liminal beings," existing in a state of betwixt and between (Turner, 1969, p. 48).

It would seem that normal personality development is not the only aspect of a twins' development that is affected by their twinship. Researchers working in developmental psychology, for instance, claim that due to the "excessive" or pathological closeness of twinship, cognitive and social development is often delayed in twins (Luria and Yudovich, 1959; Douglas and Sutton, 1978; Hay et al., 1987). Developmental psychologists also claim that twins initially learn language at a much slower rate than single born children do, and this is also attributed to the negative aspects of twinship (Day, 193; Savic, 1980; Tomasello, Mannie and Kruger, 1986; Albrecht, 2007). In short, within academic research, twinship is often represented as pathologically interdependent (Schave-Klein, 2003, p. 10).

This pathological interdependence which has been called twin symbiosis, twin situation, twin reaction, twin condition or the we-self, has been explored by a number of researchers (Burlingham, 1952; Leonard, 1961; Joseph and Tabor, 1961; Lewin, 2014, 2016).

Ortmeyer favours the term we-self to those aforementioned because he finds that these other terms do not consider the organisational features of personality. He claims the we-self involves a complementarity of mutually shared aspects of personality. Drawing on the Greek tradition to substantiate his account of human twinning, he remarks:

> The myths of past cultures, however […] are the symbolic roads to interpretation of the collective and individual unconscious. Recorded Greek mythology is a fertile historical source having relevancy for twin unity (Ortmeyer, 1970, p. 127).

Ortmeyer examines two myths, the first, is Plato's account of love, in which, humans were originally very powerful beings with four arms and four legs. Zeus had become wary that humans in their existing form were too powerful and would try to displace the Gods. Consequently, Zeus split the "unitary person" into a pair, each of whom then sought the other to reconstitute the union (Ibid.; Farmer, 1996; Stewart, 2005).

The other is an alternative telling of the Narcissus myth, which tells us that Narcissus had a twin sister whom he loved dearly. Tragically, Narcissus's sister befalls misfortune

and becomes lost to him. One day the heartbroken Narcissus discovers his image in a pool of water. Ultimately, he finds comfort in looking at the reflection of himself as it reminds him of his identical looking twin sister (Ibid.; Stewart, 2005; Lewin, 2014).

Ortmeyer interprets these myths in terms of his interactions with a depressed patient who had lost regular contact with her twin sister. For him, Plato's account of love and the alternative telling of Narcissus are similar to his patient in that, in all accounts, there is a "search for the complementary part that would make the person complete again" (Ibid.). The client seemed to have personality attributes complementary to her sister, a process that had become an integral part of each girl's life. Simply put, in all cases they were searching for the harmonising attributes of their other (twin) half, to make them feel whole again. Thus, he claims twins can be primarily understood as a 'we-self', "two personalities to some extent functioning as one" (Ibid., p. 125).

Therefore, Ortmeyer like many twin researchers, reinforces and reaffirms the underpinning assumptions we find in non-academic accounts of twins, that is, twinship is the consequence of two failed selves which results in a singular entity or we-self. Twins do not meet normative expectations of selfhood, therefore, many claim that they live on the fault lines of self and other (Davis, 2014, p. 23; Neimark, 1997). More precisely, twins embody a kind of fluid space where boundaries are not always delineated and borders between self and other are not always stable (Joseph and Tabor, 1961; Shildrick, 2002; Stewart, 2005). It seems, as a result of their physical alikeness and unique relationship, which consists of sameness, closeness and togetherness, the many aspects that constitute a self are moulded into what appears to be a we-self, and thus, it would seem, "within the we-self there is no self and no other" (Bacon, 2011, p.189). In other words, twinship can be understood as a supra- individual unit and each twin merely a third party that enables its functioning. Or put differently, twins are considered prone to operating as one person.

**Conclusion**

It would seem that although there are many ways that twins and twinship are imagined, they all essentially articulate the same assumption. That is, twinship is a result of each twin being a failed self, which results in a singular entity or a we-self. Or put differently, the self-other distinction often becomes absent or lost in twinship. As a

result, twinship is often characterised as freakish and monstrously singular in the non-theoretical literature and as pathological in theoretical accounts.

Yet, I am not confident that this accurately accounts for how we should fundamentally imagine twinship. In fact, I believe along with Taylor that an imaginary can sometimes be false, thus distorting and covering over certain realities (2004, p. 183). As he explicates:

> We regularly come across ways in which in the modern social imaginaries, no longer defined as ideal types but as actually lived by this or that population are full of ideological and false consciousness (Ibid.).

Consider this, rather than using substantive data, many researchers tend to focus on case studies. These studies tend to focus on persons with some form of pre-existing pathology rather than healthy subjects or twins. Thus, these studies are obviously limited in terms of scope. Indeed, although twins are a highly researched population (i.e. as subjects for genetics research), scholars recognise that there is relatively little literature that analyses twins and describes their experience of a healthy twinship (Adelman & Siemon,1986; Ainslie, 1997). In other words, the theoretical (and non-theoretical) literature often outlines an extremely narrow pathological or unhealthy view of twinship. As, Davis and Davis (2004) note, the limited research that exists on twins and their experiences tends to focus on the 'problems' that twins have in developing their unique identities.

What is more, the developmental outcomes applied to twins in their personality, linguistic, social and cognitive development are usually based on standardised norms founded on single-born children (Walker et al., 1992; Rice et al., 2018). In other words, norms established on healthy twins are not used as the benchmark, but rather, a singleton, which does not respect the differences between these manifestations of human existence. Indeed, as we will see in chapters 6 and 7, twins (particularly monozygotic twins), follow a developmental trajectory that differs significantly from their single-born counterparts, and therefore it seems nonsensical for these researchers to utilise developmental outcomes based on singleton norms.

For Taylor, while it is impossible to make the social imaginary fully explicit in theoretical propositions, it is nonetheless susceptible to being influenced by otherwise explicitly formulated theories and ideas (2004, p. 28). Thus, I contend that our imaginings of twins in both non-theoretical and theoretical terms deeply affect one

another and thus reaffirm and reinforce the assumptions that underpin our predominant understanding of twinship. As Dillon says:

> We look for twins' similarity in their appearance, behaviours, thoughts, and we want twins' "reality" to reflect that which we imagine it to be—two beings indistinguishable from one another who often speak and act in unison, dress identically, and share an insular closeness (Dillon, 2011, p. 3).

Thus, I will argue throughout the rest of this project that we are "engaging in a cover-up, averting our gaze from various excluded and disempowering groups or imagining that their exclusion is their own doing" (Taylor, 2004, p.183). In other words, as we will see, in the next chapter, rather than recognising that there may be a problem with our normative model of selfhood, we instead imagine that a twin must be in some way flawed, and twinship so far removed from the normative spectrum of relationships that it is monstrously singular. Consequently, often we see psychology tasked to restore normativity vis-à-vis selfhood, by purging twinship, and in turn, rectifying its so-called failed selves.

However, it is also worth taking note of a point made by Taylor:

> Like all forms of Human imagination, the social imaginary can be full of self-serving fiction and suppression, but it can also be constituent of the real. It cannot be reduced to an insubstantial dream (2004, p.183).

I would agree with Taylor on this point, perhaps we are correct to imagine some twins as representative of the ways we depict them in both the non-theoretical and theoretical accounts outlined. Hence, rather than contending that these accounts are completely inaccurate, throughout the rest of this project, I will advance a more modest position.

Simply, that is, much of the existing literature does not fully account for the experience of being a twin and by implication, it provides an inadequate description of twinship. In other words, the social imaginary with regard to twins is limited, and thus distorts and conceals many of the realities of being a twin. In other words, in many cases, the assumptions that underpin our understanding of twins are false and therefore must be revised.

For that reason, the next chapter shall deal with the notion that twinship is the consequence of two failed selves which results in an over bonded supra-individual unit or we-self. In simple terms, I will examine the notion that the self-other distinction becomes absent or lost in twinship. Evidently, I will position myself against this view.

Instead, I will contend that if we are to provide an account of intersubjectivity in twins without pathologising twinship, it will be necessary to claim that a self-other distinction is always present in their relations, and which forms the basis of such relations.

# Chapter 2: A We-Self or Two Selves?

## Introduction

If we are to give an account of intersubjectivity in twins, it will be necessary to deal with the notion that twinship is the consequence of each twin being a failed self, which results in a singular entity or we-self. Put differently, there is a commonly held view that the self-other distinction is absent or lost in twin-twin social interaction. That is, as far as I am concerned, a fairly radical charge, and irrespective of its validity, a presupposition which has serious bearings on how one describes intersubjectivity in twins.

Crudely put, this chapter explores the legitimacy of the view that the self-other distinction becomes absent or lost in twinship. I argue that this is false. I will instead advance the position that the self-other distinction forms the basis for twins' highly entwined relations and is always maintained thereafter.

To demonstrate this, it is necessary to give an account of how the notion of the we-self arises. I turn to the philosophical literature for guidance. Particularly, I examine two conceptions of self; namely, the minimal self, and narrative approaches to self. We shall first concern ourselves with the latter, as I believe it can most effectively provide us with the tools necessary to explore the notion of the we-self.

Some may ask, why turn to narrative approaches to self? Because twins, like their singleton counterparts, structure their discordant experiences concordantly through narratives. In other words, a narrative gives temporal unity to experiences and events. Moreover, a narrative is not isolated from its context. It is situated in a wider socio-historical milieu. Therefore, if we want to understand the we-self, we need to understand it as a notion that is embedded in a wider social and historical community.

However, before we can understand the role narrative plays in the manifestation of the we-self. It will be necessary to give an account of the normative model of selfhood and twinhood or what a self *ought* to be and what a twin *ought* to be. Again, like the last

chapter, this will be based upon normative conceptions of selfhood that are Western in origin.

Crudely put, I will argue that, on the one hand, selfhood is associated with the values of uniqueness, independence and difference, which are contained within a bounded singular body. On the other hand, twinhood is associated with values of sameness, togetherness and closeness. These models are in constant tension with one another and consequently create a number of contradictions in the narratives that surround twins and their relationship.

I then turn to twins' accounts of autobiographical memory, which demonstrates they construct a we-narrative in order to give constancy and uniqueness to their wealth of shared experiences and events. However, I will argue that twins do not construct their we-narrative for themselves. In actuality, they do so in order for others outside of the twinship to easily understand them. This is because others primarily understand twins as a singular entity or we-self. In order to comprehend this, it will be necessary to elucidate the phenomenology of doubles, that is, what occurs when a singleton has an experience of identical looking twins.

In essence, I will argue that the experience of twins creates confusion in one's practical experience, because one cannot easily assimilate twins into our normative model of selfhood, which is associated with a bounded singular body. This in turn, leads to the totalising of each twin, in the sense that twins are subsumed within the category of twinhood. As a result, their differences are removed, and they are reduced to a singular entity or a we-self.

The totalising effects of the we-self then become the basis of the stories or narratives that singletons (grandparents, parents, siblings, friends) tell about twins. The process then becomes circular, as twins—in order to make themselves comprehensible to others—construct a we-narrative, which only serves to reinforce the view that, they can be understood as a singular entity or we-self.

Thus, I will claim, it is socially mediated narratives enacted by single-born persons—fuelled by contradictory models of selfhood and twinhood—which cause many in Western society to conceive of twins as a singular entity or we-self. However, as we will see, twins' first person accounts or self-narratives do not substantiate this view.

Rather, many twins see their twinship as a joint enterprise, which incorporates a sense of self and other. As a result, I will argue that those who conceive of twins as a we-self or an over bonded supra-individual unit are working with a false or limited account of selfhood.

Puzzlingly, many scholars instead of acknowledging an issue with our general conception of selfhood, place the fault squarely with twins. Or, put differently, twins fall outside the normative model of selfhood, therefore twinship is often considered pathological in nature. I will argue that this is a consequence of the conception that views twins as failed selves who form a we-self or supra-individual unit with their co-twin.

In order to dismiss this claim, I turn to the notion of the minimal self, which situates the fundamental structures of the self in the 'mineness' of one's first person experience. As a result, it will become clear that there is a self-other distinction in twinship, moreover, their highly entwined relations could not arise without this distinction. And, as we will see throughout this project, one could not give an adequate account of intersubjectivity without accepting this first.

**Two Conceptions of Self**

As we have seen extensively in the last chapter, within our social imaginary we commonly view twins as sub-individuals or failed selves, part of a we-self or supra-individual unit. In other words, the self-other distinction seems to be absent or lost in twins' relations. But what is really meant by this emphasis on sameness and indistinction? To put it another way, what are the conceptual underpinnings by which one defines self and other?

The self is a term that is employed ubiquitously in philosophical literature and its specific meaning is hard to pin down. Ulric Neisser (1988) provides one well-known example of this where he outlines five varieties of self: the ecological, interpersonal, extended, private, and conceptual. In the recently published *The Oxford Handbook to the Self,* edited by Shaun Gallagher (2011) there are no fewer than thirty-one chapters dedicated to different conceptions of the self.

Whether these variations within the theoretical framework are justified, is not my concern; my only point here is to illustrate the immense diversity of concepts within the

literature. Therefore, for practical purposes, it will be necessary here to limit our discussion. Current debates raging within the philosophical literature tend to focus on two conceptions of self. The first is the minimal self (Gallagher, 2000; Sass and Parnas, 2003; Sacks, 2007; Zahavi, 2014), and the second is the narrative self (Dennett 1991; 1992; Schechtman, 2006, 2011; Bruner, 2004; McAdams, 2006; 2008). Krueger points out that this is due to their ability to capture two features of consciousness, "the phenomenal character of experience as well as its temporal (i.e. synchronic and diachronic) unity and social situatedness" (2011, p. 34).

For the moment, our discussion will focus on the narrative view. It should be made clear at this juncture that I do not intend to bring any unwarranted claims against narrative approaches to the self. Instead, my aim here shall be to show how the we-self tends to arise as a consequence of enacted narratives.

As we shall see throughout the development of this chapter, the self arises as people, through their social relations with others, tend to structure themselves and others via narratives. How one interprets their experiences and consequently structures their narratives is permeated by notions that exist within the social imaginary. In simple terms, I contend that when twins are encountered, people tend to subsume them into the cultural model of twinhood and thus reduce them to a supra-individual unit or a we-self. This, in my view, occurs primarily because twins do not fall neatly within the cultural (normative) model of selfhood, which is associated with a unique independent person that is bound up within a singular body. This has a knock-on effect for twins because they then go on to primarily structure their stories as a we-narrative in order to give coherency and consistency so that others outside of the twinship can comprehend them.

In order to demonstrate this, it will be key to draw on the rich and varying accounts of narrative approaches to self.

**Narrative Approaches to Self**

Varying and diverse narrative approaches to selfhood have in recent years gained increasing popularity in a wide range of disciplines, including both psychology and philosophy. Why is it useful to think of the self in terms of narrative structures? A standard answer is that a self, essentially speaking, is an agent, and that one's actions gain intelligibility by being placed within a narrative sequence (Zahavi, 2014a, p. 53). As Ricoeur puts it: "We consider life to be identical with the story or the stories we tell

about it" (1988, p. 30, cited in, Tengelyi, 2012, p. 245) Similarly, the social psychologist Dan McAdams says: "Human beings are story tellers and human lives are stories to be told" (McAdams, 2008, p. 245). If one is to understand the notion that agents act for reasons, then it will be necessary to turn to narratives, because these are what enable us to make sense of actions and events, by positioning them in a meaningful temporal structure (Rudd, 2012, p. 178). Human existence manifests itself through time, and thus, to fully comprehend one's selfhood, we must explain how the self is characterised by time (Stanghellini and Rosfort, 2013, p. 66).

Ricoeur gives us a lucid account of this, by challenging what he calls the aporetics of temporality. For him, human temporality cannot be reduced to Kant's impersonal cosmic time or Husserl's phenomenological (lived) time, thus Ricoeur introduces narratives (third time) as a means of bridging the two. As he says, "the aporias of the phenomenology of time consists in the elaboration of a third time—properly historical time—which mediates between lived time and cosmic time" (Ricoeur, 1990c, p. 99).

This third time is organised by both the way cosmic time obligatorily affects the self, and how the self voluntarily comprehends and shapes phenomenological time (lived time). These two aspects come together in the practical category of narrative identity (Stanghellini and Rosfort, 2013, p. 66). Although experiences and events occur at different times, these can be incorporated into a singular story or narrative. Ricoeur states:

> [T]he narrative constructs the identity of the character, what can be called his or her narrative identity, in constructing that of the story told. It is the identity of the story that makes the identity of the character (1992, pp. 147-148).

For Alasdair MacIntyre, another philosopher who strongly associates selfhood with narrative structures, the unity of the self "resides in the unity of a narrative which links birth to life to death as narrative beginning to middle to end" (1981, p. 205). McAdams (1993) makes a similar claim when he says, that the personal myth or story brings together different parts of our lives in a purposeful and convincing whole. For him, "life narratives are psychosocial constructions of the self" (McAdams, 2006, p. 16). Narration is a process that begins in early childhood and which lasts for the entirety of our lives (Zahavi, 2007a; 2014). From an early stage, starting with language development, humans organise (for the most part implicitly) experiences and activities

into stories they tell about themselves and others, and hence arrange these narratives into a unified whole, which constitutes a self-narrative (McAdams, 2008, p. 244).

Depending on which narrative account one refers to, the self is either discovered or developed as a result of my interactions with others.[1] Simply put, there is no such thing as a self that I can independently interpret for myself; I am never the sole author of myself. One can only come to know or discover themselves through others (parents, siblings, friends, etc.). Narrative allows for aspects of self-knowledge, which goes past the narrative domain in that the self does not know itself immediately (Ricoeur, 1991, p. 80). *Ipso facto*, the narrative of any person's life is not only interwoven with the stories of their immediate others, but its wider socio-historical milieu (Zahavi, 2014a, p. 55). As MacIntyre puts it: "my life is always embedded in the story of those communities from which I derive my identity […] [t]he possession of an historical identity and the possession of a social identity coincide" (1981, p. 221). Therefore, it is important to understand the significance of the embeddedness of narratives within a social, cultural and historical tradition, as our values, ideals and goals are conditioned by the society of which we are a part. As Zahavi says:

> [T]he concepts I use to express the salient features of whom I take myself to be are concepts derived from tradition and theory and will vary widely from one historical period to the next and across social class and culture (2007a, p. 180).

One's self-narrative is powerfully shaped by culture, class, gender, and other contextual factors (McAdams, 2006, p. 16; Bruner, 2004, p. 694). Therefore, who I am is realised by placing my socio-historically situated values, ideals and goals, into a narrative that can lay out their beginning and development. Likewise, I come to know the other by learning their story, which is similarly derived.

Zahavi raises a point that will give focus to the next sections. He says, "When talking about myself, my selfhood becomes part of the public domain, and its shape and nature is guided by cultural models of what selfhood should and shouldn't be" (Ibid.). This raises intriguing questions, namely, what values do we predominately associate with our cultural model of selfhood? And, how exactly does this cultural model of selfhood and its associated values relate to the cultural model of twinhood and its associated values?

[1] One either discovers or enhances a pre-existing narrative self (Ricoeur, 1991; 1992; MacIntyre, 1981; Krueger, 2011; Zahavi, 2007; 2014), or the self is purely a social construction, a mere consequence of the stories we tell about it (Dennett 1991; 1992; Schechtman, 1996; Bruner, 2004). I reject the latter proposal.

I pursue the answers to these questions in the subsequent sections. I argue that, on the one hand, the cultural model of selfhood is primarily associated with uniqueness, independence and difference, and on the other, the cultural model of twinhood is linked to sameness, togetherness and closeness. Each twin is simultaneously encouraged to achieve both cultural models, and therefore, a number of contradictions arise. I show that these conflicting cultural models give rise to particular narratives, which others use to understand twins. In other words, I argue that the reduction of two factual embodied beings into a singular entity or we-self is utilised to give coherency to what otherwise would cause confusion within one's practical experience. In order to counter this, I turn to the notion of the minimal self. As a result, I claim that the we-self is just a misinterpretation of twins' highly entwined relations, and as we shall see throughout this project, these relations could not arise without each twin first being a self. To rearticulate positively, each twin has at the very least, a form of pre-reflective minimal selfhood; and it is this that allows for a rudimentary distinction between self and other, that precedes their highly entwined twinship. Therefore, in order to give an account of intersubjectivity in twins it will be necessary to start from the position that each twin is a temporally and spatially distinct subject of experience, or minimal self.

**Conflicting Cultural Models**

For the moment, I want to turn away from narrative approaches to self and return to the social imaginary, the purpose of which is to determine how an average person imagines what exactly a self *ought* to be. In other words, of what do we consider a normative model of selfhood to consist? Our commonplace understanding, or cultural model of selfhood, is much easier to pin down than the many varying and complex philosophical accounts of what a self is.

One value explicitly associated with this cultural model of selfhood is the notion of having a unique individual identity, which is rooted in the rise of Western Individualism. To be precise, it can find its roots "in the entrepreneurial activities of the thirteenth century and the growth of Calvinistic Protestantism, individualism emerged out of a market economy that encouraged contractual relations between workers over traditional associations based on kin and class" (Bacon, 2011, p. 21; MacFarlane, 1978). Independence is another of these values, as being an independent individual is a key factor in socially respectable personhood (La Fontaine, 1985). In addition, Turner notes,

"to be an individual is to be a particular individual" (1986, p. 6). Difference, or to be different, then, is another value explicitly linked to our cultural model of selfhood, and therefore, is a central component of 'felt' individuality (Cohen and Taylor, 1976, p. 20).

One way we express these values is through our bodies. Gail Weiss notes that there is, especially in Western society, the pervading idea of "one body, one identity" (2009, p. 181). Hence, the values of uniqueness, independence and difference, related to our commonplace understanding of selfhood, are discretely embodied within our singular and separate body, and it is from this that we get the notion of the "bounded individual" (Geertz, 1974, p. 31). The bounded individual captures the quintessence of personhood in Western society. As Shildrick points out, to have selfhood is "to be distinguished from the other, to be ordered and discrete, secure within the well-defined boundaries of the body" (2000, p. 79). As Weiss Notes: "'One body, one identity' is a basic legal, ethical, political, and social presupposition that we both implicitly and explicitly rely upon in our everyday dealings with others" (2009, p. 173). Therefore, I think it is fair to argue that the average person imagines a self as embodied, bounded, and unique, which is set in contrast to other embodied, bounded, and unique selves (Bruner, 1994, Davis and Davis, 2010).

However, as we have seen, there is more to one's constitution of selfhood than merely the use of their body to mark them out from others. One derives their values, ideals and goals as a consequence of being an active agent in narratives that are mediated through social relations. As noted, depending on which narrative account of self we refer to, one develops or discovers selfhood through their social relations; in so doing, one aims to embody associated values. Therefore, selfhood as a cultural model, or what a self *ought* to be, is strongly associated with the notion of a singular bounded body that expresses the values of uniqueness, independence and difference.

On the other hand, we have seen in the last chapter that there seems to be three values we explicitly associate with twinship, which are sameness, togetherness and closeness (Bacon, 2011, p. 31). It appears then that we have in opposition to our cultural model of twinhood, the cultural model of selfhood, which is predicated on uniqueness, independence and difference.

Indeed, as we saw in the last chapter, twins are often imagined as transgressing these normative values. Consider this, many who attend twin festivals such as the one held

annually at Twinsburg Ohio report how ‘uncanny’, ‘strange’, and ‘creepy’ it is to see adult twins dressed exactly the same (Davis, 2014). Davis and Davis (2010) argue that seeing adult twins dressed alike is more remarkable than it is charming [as it is with young twins]. As a result of these two cultural models:

> Twins […] face a series of intensified contradictions: whilst they are expected to be the same, they are expected to become different; whilst they are expected to be together and close, they are expected to become independent (Bacon, 2011, pp. 48-49).

Hence, two cultural models are in constant tension with each other and even tend to contradict each other. On the one hand, we have the cultural notion of twinhood that promotes sameness, togetherness and closeness; and on the other, we have selfhood, which promotes uniqueness, independence and difference. I do not dispute that these cultural models are important dimensions in how one becomes a twin (and a self). Nevertheless, it seems to me they are not fundamental to what twinship is; rather, they contribute and simultaneously challenge twinship at different intervals throughout its development. In order to understand how these Western cultural models of twinhood and selfhood relate to the points I have raised, let us now turn back to the narrative approaches discussed earlier.[2]

[2] Indeed, while this project was explicitly concerned with Western socio-cultural narratives and how these narratives shape the experience of being a twin, one would indeed expect that non-Western cultural narratives would throw up many variations in how this experience is formed.
Interestingly though, several ideas pertaining to twinship seem to be constant—in one form or another—across many different cultures.
For example, the idea of a special bond between twins is noted across various tribes in different African countries (Piontelli 2008, Davis, 2014). McIlroy notes in these tribes “it becomes evident that the twin bond is regarded as both sacred and indestructible” (2011, p. 3). Also, what is termed as the we-self, twin symbiosis, twin situation, twin reaction or twin condition seems to appear cross-culturally. For example, “twins are tabooed in Japanese as in many other cultures because they represent, in a frightening way, the illusion of two persons as one” (Bargen, 1991, p. 153). Similarly:

> [A] shared or combined soul between twins is common to an extensive range of peoples, including the Sumbanese and Toraja of Indonesia, the Burmese Karen, the Manchurian Tungu, the Mirabelais Haitians, the Yoruba of Nigeria, and the Nuer of southern Sudan. The Nahani of western Canada believe twins to be two halves of a whole, sharing one breath between them, and the Jicarilla of New Mexico observe twins as two people living out one, mutually shared life (McIlroy, 2011, p. 3,see also, Pector, 2002).

What seems to vary is the different attitudes different cultures foster toward twins and indeed one would expect that these would throw up variations in how twin experience is shaped. As we have seen Western cultures seem to be simultaneously fascinated, disturbed and suspicious of twins, however, in other cultures they are viewed as deities or quasi deities or even as bad omens or as a sign of infidelity from the mother (Piontelli, 2008; McIlroy, 2011; Davis, 2014). In Japan, for instance, “twins are said to lie in their alleged propensity for being ‘animal-like’, and ‘the result of sexual lasciviousness’. Twins are also said to ‘inherit bad traits’, ‘die early’, and ‘have defects’” (Bargen, 1991, p. 153).

## The Narrative We-Self

We have ascertained from the last section the values associated with the cultural models of selfhood and twinhood. In so doing, we have seen that these notions create a series of intensified contradictions for twins. The means through which these contradictions manifest will now become the focus of the following sections. In other words, we will now return to the narrative accounts in order to demonstrate these incongruities, and therefore the limits of the notion that twins can be fundamentally understood as a we-self or supra-individual unit.

All of the accounts mentioned emphasise the importance of others in the construction of our narrative identity. As McAdams states, narrative identity is, "co-authored by persons and the social worlds wherein their lives make sense" (2006, p. 16). This rings especially true for twins, as there is not just an 'I', but also a 'We' that plays a significant role in their narrative understanding. Hence, narratives tend to overlap and intertwine with one another.

Take the case of Gina and Tina, in Davis and Davis's (2010) discussion of intertwined memories. Tina was once injured and had to have this injury sewn up in the emergency room. Gina, the non-injured twin, remembers being beside her sister in the emergency room, and how terrifying the experience was for her. However, it turned out that Gina had not been beside her sister in actuality; she had instead been in the waiting room while her twin was treated. The memory had become shared or intertwined, rather than ascribed to an individual or self.

There is plenty of empirical evidence that shows, twins have an exceptional amount of shared and over-lapping memories, they quite often even seem to dispute memory ownership (see, Sheen, Kemp, and Rubin, 2001; 2006; Sheen, 2002; Kemp, Burt and Sheen, 2003; Ikier et al., 2003; Küntay, Gülgöz, and Tekcan, 2004). Sheen, Kemp, and Rubin (2001) report that as a result of a cross-experiment comparison, twins are more likely than regular siblings to have memories where there is dispute in respect to who the protagonist was. Bruner and Fleischer-Feldman claim that autobiographical memory creates a life story around a self under particular constraints that are shared with no one else (1996, p. 292). Yet, as we can see with Tina and Gina, and the empirical examples above, twin memories evoke a large collection of overlapping and shared experiences.

I think we can make sense of this if we look at the narrative accounts. Narrative is not just a recounting of brute facts, as Bruner points out: "When somebody tells you his life […] it is always a cognitive achievement rather than through-the-clear-crystal recital of something univocally given" (2004, p. 692). Similarly, Ricoeur claims, "narrative mediation underlines this remarkable aspect about knowledge of the self as being an interpretation" (1991, p. 80). As stated earlier, for Ricoeur, third time or narrative identity is formed from both the way that cosmic time affects one involuntarily and how one voluntarily understands, and shapes lived or phenomenological time. These two aspects of narrative identity are interwoven into a dialectical between the historical and the fictional:

> From these intimate exchanges between the historicisation of the fictional narrative and the fictionalization of the historical narrative is born what we call human time, which is nothing other than narrated time (Ricoeur, 1990c, p. 102).

History is bound to what has really happened, a concrete event that transpired in a definite physical place and time. The historical aspect of our narratives is tied to what actually happened, a real event that transpired in a definite physical place and time, this is something that can't be recreated or reversed (Stanghellini and Rosfort, 2013, p. 67). Nevertheless, as Ricoeur says, since our narratives are interpretations of experiences and events gone by, they will always contain an imaginary component, a "fiction-effect" (1990c, p. 186) or "quasi-fictive" element (1990c, p. 190).

The multitude of discordant experiences and events that occur in our lives are far too complicated and multidimensional to fit seamlessly and effortlessly into the concordant narratives that we construct—particularly for twins. The disputed and shared memories of the twins I have referred to above are from a time when they were young, a time when sameness, togetherness and closeness are particularly promoted. A storyteller, or in this case storytellers, will subsequently enforce more consistency, fullness, and closure on events than they possessed while said events were actually being experienced. Storytelling automatically involves an element of confabulation (Gallagher, 2003; Zahavi, 2014a). With this in mind, it is easy to see how a certain amount of confusion arises when twins recount their experiences. Therefore, in order to avoid confusion, twins structure their shared narrative primarily from the standpoint of 'We' rather than 'I'.

Twins of all ages utilised the plural pronoun ‘We’ to voice their accounts of twinship. Kozlak (1978), Davis (2014) and Conlon (2009) show, the plural pronoun ‘We’ endures so much so, that it is still prominent in adult accounts of being a twin. Therefore, it seems twins primarily structure their shared and overlapping narratives as a we-narrative or what some scholars interpret as a we-self. Examples of this can be found in Bacon’s work:

> For instance, Ruth (age 14) explained that ‘we don’t think it’s fair that John always like gets things more than we do’ and Sally (aged 20) said ‘we didn’t like the thought of being on our own’ (2011, p. 190).

For her, “we do not know where one twin ends and the other begins” (Ibid., p. 189), as there is no “I” to mark out Ruth or Sally from either of their twin siblings. Consequently, she claims within the we-self there is “no self and no other”. Joseph and Tabor (1961), who both analysed monozygotic twins, speak of the “twinning reaction”, which they refer to as mutual “inter-identification”, a fusion of self with other. In short, it would seem that, for many scholars, the constitution of the we-self in twins is due to their tendency to construct their narratives from the plural pro-noun ‘We’ rather than the singular ‘I’.

However, the question remains, for whom, exactly, are twins structuring a coherent and consistent we-narrative? Consider this:

> The reason why disputed memories occur most frequently in identical twins, and more frequently in fraternal twins than in same-sex siblings, should be partially sought for among the characteristics of the rememberers. Twins are very similar in appearance and behaviour. This similarity contributes to the possibility that parents, grandparents and other people will confuse the precise protagonist as they retell a past event. Events comprising the narratives of family history may be repeated with each of the twins separately identified as the main actor (Ikier et al., 2003, p. 245).

Memory creates narratives and narrative creates memory (Davis and Davis, 2010, p. 132; Bruner 1994). As we have seen, a self-narrative or in this case a we-narrative doesn’t just rely on the stories we tell about ourselves; others are an integral part of this constitution through the narratives they tell about us. As the cognitive psychologist Charles Fernyhough says, “Disputed memories seem to be an example of how the

content of our memories can be affected by the stories that other people tell. Just as a parent can instil false memories in a child, so family members can shape each other's remembering" (2012, np).

To get to the point, the cause of the we-narrative, I would argue, is the same as the disputed memories outlined above. As Davis and Davis point out: "Others including your own family members either confuse your embodied personal identities or conflate them into a unit identity such as 'Davis Twins'" (Davis and Davis, 2010, p. 131). For twins, "particularly, developing identity and an individuated sense of self presents a problem if, as children, [...] they are treated symbiotically – like two parts of a whole" (Howell, 2013, np).

Therefore, the reduction of two factual embodied beings into a singular abstract entity, or a we-self, is utilised to give coherency to what otherwise would cause confusion within one's practical experience. Consequently, twins primarily come to construct a we-narrative in order to give coherency and consistency for others outside of the twinship to understand them. Furthermore, the process becomes circular as, this we-narrative reinforces the notion that a twin appears to be a sub-individual part of a we-self or supra-individual unit. Hence, we get the notion that twins can be fundamentally understood as a singularity, where the self-other distinction seems to be absent or lost.

In other words, we tend to totalise twins. 'Totalisation' is a term I borrow from the philosopher Emmanuel Levinas (1969). This process will be the focus of the next section. In essence, I claim that because twins create contradictions in our normative model of selfhood, we totalise them by reducing them into a singular we-self or supra-individual unit.

**The Phenomenology of Doubles**

In this section, I want to explore the phenomenology of doubles. That is, how others experience twins or what they perceive as doubles. I contend that the experience of twins creates contradictions in one's practical experience, because they cannot easily assimilate twins into a normative model of selfhood. This in turn leads to the totalising of each twin, in the sense that, twins are subsumed within the category of twinhood, as a result, their differences are removed, and they are reduced to a singular we-self or supra-individual unit.

As we have already seen, the idea of a bounded individual within a singular and separate body is a means through which we express our individuality, uniqueness and difference from others. However, as Shildrick points out:

> Identical twins and even pregnant women, [are] examples […] of ontological uncertainty. In other words, against an ideal bodyliness – that is the being of the self in the body – that relies on the singular and the unified, where everything is in its expected place, monstrosity in its various forms offers a gross insult (Shildrick, 2002, p.10).

The view that twins create ontological uncertainty, which provokes monstrosity due to their bodily similarity, is certainly not new. Indeed, they have been associated with monstrosity ever since Aristotle, "placed them alongside those born with extra digits, limbs, and so on" (Viney, 2013, np). In order to understand what Shildrick means by ontological uncertainty, let us now turn to Levinas.

Levinas reserves the word 'ontology' for a general tendency within western philosophy to give priority to one's mind over the senses as the means through which one derives knowledge. In other words, he is critical of Western philosophy for reducing thought and being into the same thing. Therefore, the study of ontology can only be understood in terms of what can be unified or reduced within the sphere of the ego, the self, which consequently omits the difference between being and thought. He calls this process totalisation (Levinas, 1969; Moran 2000). Totalisation is "characterized by a relentless movement of absorption and reduction. It absorbs the foreign and different into the familiar and identical. It reduces the Other to the Same" (Zahavi, 2003, p. 4). In other words, the knowing subject reduces what was originally other, or exterior, to something familiar, by placing it into a conceptual framework and therefore part of the same, or the self (Levinas,1969; Moran, 2000; Atterton and Calarco, 2005). One example of this is when one limits others to a set of normative categories such as race, gender, nationality (Atterton and Calarco, 2005), or for our purposes a bounded singular bodily self.

In this context, what Shildrick seems to be claiming, is anything that causes contradictions in our normative categories creates ontological uncertainty, as these are elements of being that one cannot easily unify within an integrated conceptual framework. Therefore, I contend, because of their similar bodily appearance, twins contradict our normative or cultural model of selfhood because they are experienced as doubles rather than singular and unique.

Our experience of things never occurs in isolation of context (Moran 2000, Zahavi and Gallagher, 2008). Therefore, what we experience is intimately connected with the question of meaning. As Stanghellini and Rosfort point out: "Our experiences are permeated by the heterogeneous values at large in human existence" (2013, p. 43). Hence, when others encounter similar looking twins, they cannot easily subsume them within a normative model of selfhood. Instead, they totalise them into the category (or cultural model) of twinhood. In so doing, the difference between each twin is removed and they are reduced to a singular unit identity, or a we-self:

> 'You're a difficult problem,' said K, comparing them as he had already done several times. 'How am I to know one of you from the other?' […] 'I can only see with my own eyes and with them I can't distinguish you. So, I shall treat you as if you were one man and call you both Arthur.' (Kafka, 1974, p. 24).

> [I]n my early childhood days, our next-door neighbour often referred to us as 'Check' and 'Double-Check'. He said that he could definitely tell us apart but could never remember who Jill was, and who was Joan, so he was just going to call us his 'names'. It never occurred to me until I was much older that he never could tell us apart but his name calling was a way for him not to reveal to us that he could not tell us apart. I find it rather amusing that many people do not want to admit they could not tell us apart or even try to tell us apart. Other names used over the years for us have included: 'Peat and Repeat'; 'Twin 1 and Twin 2'; 'Jack and Jill'; 'Knick and Knack'; 'Copy and Cat'; 'Twice as Nice' and 'Trouble and Double Trouble' (Conlon, 2009, p. 21).

As we have seen, it is an essential part of our being human, that we experience ourselves and others "as being a particular, embodied self-situated in a certain pragmatic, cultural, and social context" (Stanghellini and Rosfort, 2013, p.23).

Twins fall outside the realm of the normative category of selfhood, as they are encountered as doubles, or to be more precise, they do not fall within a singular bounded body that is distinct from others. Moreover, as noted in the last chapter, they are often imagined as being at the extremes of the values of sameness, togetherness, and closeness and therefore are thought to transgress normative expectations of the individual. This provokes imagery of supernatural abilities and monstrous singularity, hence:

> Numerous myths fairy tales, urban legends, and novels explore the horrifying or hilarious possibilities of physical, psychological, or supernatural duplicates of unique individuals in the form of imposters, doppelgangers, robotics replicas, or 'evil twins'" (Sadri and Sadri, 1994, p. 204).

In order for one to overcome their encounter with similar looking twins (or what they think they experience as doubles) that creates ontological uncertainty, they must absorb them into the cultural model of twinhood, so that they can be integrated into a conceptual framework or a narrative which gives them constancy and consistency. Or put differently, we reduce twins to a we-self or a supra-individual unit. Consider this:

> In most cases, the plural pronoun 'we' denoted the common and simultaneous experience of togetherness: 'we put a show on' (Peter); 'at school we do rugby' (Dan); 'we used to climb over chairs and stuff' (Olivia). Although we are inclined to think of the two bodies acting separately but simultaneously, this imagery also conjures up a picture of conjoined twins: two bodies connected to each other (Bacon, 2011, p. 189).

Would one imagine two bodies conjoined to each other, if the persons using the plural 'We' were not twins? Bluntly, unless those persons were talking about sexual intercourse, then I think not.

To sum up, there is an immediate lived experience of two similar looking beings as doubles. One's experience of something does not happen in isolation of context. Put differently, all experience is drenched in meaning. When one experiences others, that experience is permeated by the normative category of selfhood or what a self *ought* to be. In other words, we assume that they, like us, will be a particular embodied being or a unique and bounded self. However, twins create a contradiction in one's practical experience, as they cannot be easily distinguished as such and therefore create ontological uncertainty. Therefore, in order to make twins familiar, we totalise them into the category of twinhood, and, as a consequence, we reduce them to a we-self or supra-individual unit.

In what follows, I shall outline the phenomenology of doubles in relation to narrative understanding.

**Totalising Twins through Narratives**

The phenomenology of doubles that I outline above, points to the limits of understanding others through narratives. Zahavi draws a correlation between narratives and totalisation when he declares:

> Needless to say, this is also a criticism that one could direct at the attempt to understand others by ensnaring them in unifying narratives. To put it differently, the narrative approach to others might be criticised for entailing what could be

> called a domestication of otherness: You reduce the other to that which can be captured in narratives (Zahavi, 2007a, p. 189).

Totalisation is a rejection of the other's difference, the denial of the otherness of the other. That is, it is the impressing of the other in the same or the self.

The narratives that accompany twinship are utilised in order to give constancy to what otherwise would be considered:

> [W]ith suspicion due to their ability for undermining social legal, and moral underpinnings of society by "appearing" at more than one place at one time. Twins are often asked whether they have intentionally 'fooled' their parents, teachers, or lovers (Sadri and Sadri, 1994, p. 205)

Socially mediated narratives unify two embodied factual beings into a singular entity or we-self. Anything that doesn't fit within the narrative is either forgotten about or considered as secondary or contingent on its unity. As Conlon notes:

> This research has revealed that my family grounded the identity development of us twins, in the structure of a set. I had to delve deep into my research to understand that my family identified us as individuals; however, their perceptions were grounded in thinking of us as a set. They outlined our identities in the frame of a set, through our differences and likenesses (2009, p. 77).

Hence, it would seem, it is socially mediated narratives enacted by single-born persons—fuelled by contradictory cultural models of selfhood and twinhood—that is actually at the heart of the thinking of those who claim a twin can be fundamentally understood as part of a we-self, or as a supra-individual unit.

This indicates to me that those who hold this view are essentially working with a false or limited account of selfhood, as it does not allow for a self-other distinction in twinship. Bafflingly, rather than recognising that there may be a problem with our normative model of selfhood, we instead assert that twins must be in some way flawed. Indeed, as noted, much research on twins' bases developmental outcomes on norms founded on single-born persons (Walker et al., 1992; Rice et al., 2018) and therefore, it does not respect the difference between these manifestations of human existence.

In other words, twins fall outside the normative model of selfhood; therefore, twinship can be considered a type of psychopathology. Take for example, the large body of psychoanalytic research explored previously; which emphasises how twins "fail" to achieve "the ideal" sense of self. Thus, many a twin is often described as a "failed", "incomplete", or "split" self who end up forming a "we-self" with their co-twin and thus

twinship is often conceptualised as "pathologically interdependent" (Leonard, 1961; Ainslie 1997; Schave-Klein, 2003; Davis 2014)

Yet, twins' first-person accounts do not seem to corroborate this view. In other words, despite overlaps, twins' self-narratives also tend to differ in significant respects. For example, in Prainsack and Spector's study, rather than claiming they function as a we-self or a supra-individual unit, monozygotic twins Jessica and June were very aware of each other's personality to the extent that June said:

> I used to always wish that maybe I was a bit more like her sort of thing. I always wished I had a bit more of her personality than my personality. And I've gone through stages when I wished I looked more like her, because we don't feel that we look anything like each other (2006, p. 2745).

Yet, thinkers like Lewin regularly, as well as recently claim that in twins, "the sense of self is to a greater or lesser extent shared, or the boundaries between them is less clear" (2016, p. 36). In other words, due to the lack of a distinction between self and other, twins are considered to lack individuality. Yet, many twins do not seem to feel this way, as identical twin, Emma, says: "even though we're identical twins, we're very individual'' (Prainsack and Spector, 2006, p. 2743). In fact, none of the identical twin respondents in Prainsack and Spector's study reported any problems with the development of individuality (2006, p. 2745).

Gallagher notes, to occupy a position within a self-narrative "requires a conceptual, objective, narrative self that is aware of itself as having a point of view that is different from others" (2006, p. 228). My point is, although a we-narrative is an important and enduring part of twinship, it is not reducible to the self-narrative of each twin. As Zahavi points out:

> We-experience is not prior to or equiprimordial with self-experience or other-experience. Rather, paradigmatic cases of we intentionality presuppose (without being reducible to) second-person perspective taking and reciprocal empathy. Self-other differentiation, the distinction between self and other, consequently precedes the emergence of, and is retained in, the we (Zahavi 2015, p. 158).

I claimed earlier, that twins seem, at least to some extent, to comply with the stories others tell about them, by placing their shared and overlapping experiences into a coherent and consistent we-narrative. Yet, as should be obvious from the above, if one delves a little deeper into first person accounts of twinship, or twin's self-narratives, this does not indicate an absence of the self-other distinction. Consider this:

> The blanket is our protective shell. It unites us in our own environment. Dualling here means that both first memories are the same. But it also means that the memory narrative co-embodies and unties us and at the same time it closes us off from the outside world. We are the giggling lump under the blanket. Our memory entails a sense of self and other as collaborators in action but also a sense of self and other as insiders, under the blanket, and outsiders, our mother, our older sister and her friend (Davis and Davis 2010, pp. 139-140).

Within this shared we-narrative, there is a clear sense of self and other. For these twins, their relations do not constitute a failed self, which results in a singular entity or we-self; rather, "twinship for us was in many ways a joint enterprise. Like many twins, we shared a room, we shared a life and we were always together" (Ibid.). Indeed, it would seem the we-narrative shared between twins is quite obviously contingent on a self-other distinction, which enables them to be explicitly aware of their overlapping and divergent self-narratives.

Hence, it seems although twins do, at least to some extent, comply with the predominant socio-cultural narratives we have about twinship (i.e. by utilising a we-narrative), these narratives are not fully reflective of the self-narratives that we find in first-person accounts of twinship. As one twin exclaims:

> I resent people's impressions of twins. It aggravates me when people say we are exactly alike. They make such generalizations — 'Oh, you are so identical...the same eyes, voice, hair.' It hurts to hear this. I feel freakish when people stare at us, as if we were being dissected and automatically considered to be one person, like a record that's been duplicated (Stein, 1978, p.107).

It would seem then, that those who conceptualise twinship as a supra-individual unit, or we-self, are endorsing the view that selfhood is purely reducible to the stories we tell about twins, and to the we-narratives twins use to make themselves comprehensible to others outside of the twinship.

I must stress at this point; I am not trying to draw a blanket criticism against narrative accounts of self. Rather I am trying to point to the limits of narrative understanding, as enacted in our socially mediated world. In fact, Ricoeur explicitly recognises that narratives are limited with respect to the elucidation of both time and identity (Stanghellini and Rosfort, 2003, p. 69). Moreover, he does not subscribe to the radical constructivist notion that a self is purely the stories we tell about it, or the actions that one executes. As he says: "Narrative identity thus becomes the name of a problem at least as much as it is that of a solution […] and has to link up with the non-narrative components in the formation of an acting subject" (1990c, p. 249). In fact, he points to a

pre-narrative self that is responsible for the fact that a practice gives meaning to the lives of the participating subjects (Ricoeur, 1990c, p. 296). MacIntyre also seems to hold a similar position, when he insists that, "It is important to notice that I am not arguing that the concepts of narrative or of intelligibility or of accountability are more fundamental than that of personal identity" (MacIntyre, 1981, p. 203).

Of what might this pre-narrative self, consist? I think Høffding and Krueger capture it, when they indicate:

> In order to construct a narrative self, one must already be a subject of experience, that is, a subject capable of having - and also caring about and reflecting on - experiences that provide content for the narratives we construct about that content (2016, p. 162).

One is only capable of constructing stories of experiences if they are the kind of being that is capable of having experiences in the first place. Moreover, one's ability to be the experiencer of experiences, "and potentially (although not necessarily) subject them to narrative scrutiny, requires the presence of a first-person perspective, a conscious subject" (Ibid.). This is a concern that also emerges in Zahavi's exposition of narrative understanding. For him, any narrative account is inadequate if it does not detect a necessary minimal element of the self, that is to say, if it overlooks the fundamental, 'givenness' and 'mineness' that structures experiences (Zahavi, 2007a; 2014a).

In what follows, we shall explore the notion of the minimal self in relation to twins. I will contend that twins have a minimal sense of self that allows for a basic distinction between self and other, it is this that forms the basis for and is always retained thereafter in their highly intertwined relations.

**Minimal Selves**

Thus far, we have seen that to reduce the relations between twins to a supra-individual unit or a we-self is a form of totalisation that removes the differences between each twin, and consequently, conceptualises twinship as pathologically interdependent. Put differently, a common view we find about twins is that the self-other distinction becomes absent or lost in their twinship. We will now turn to the notion of the minimal self in order to demonstrate the inaccuracy of this claim. I will instead propose that, twinship could not arise in the first place without each twin being a minimal self. To rearticulate that positively, I shall instead advance the position that twinship is

contingent on self-experience and other-experience, and therefore, the self-other distinction is always retained in twins' relations.

One could argue that a sufficient means for clearly defining self and other lies in the givenness of my conscious experience. In other words, what one needs is an account that expounds a minimal or core self, based on the 'mineness' of my experience. Zahavi holds a similar view, moreover, while he recognises the importance of the narrative approaches to self, he considers the minimal self to be a necessary precondition for any narrative account (Zahavi, 2007a; 2009; 2014a).

For him, all consciousness has egological content, which crudely translates as a first-person perspective. Put differently, my tacit attentiveness to a specific conscious experience includes, by its nature, a tacit awareness of one's self as the subject of that experience. Essentially, when a subject's intentionality is directed toward something such as x, the subject will be tacitly aware of themselves perceiving or thinking about x. Zahavi uses the qualitative maxim of "what-it-is-likeness", stating that "experiences have a subjective 'feel' to them, a certain quality of 'what it is like' or what it 'feels' like to have them" (Ibid., p. 116). Moreover, he states, "this is also the case for perceptual experiences, as well as desires, feelings, moods, and thoughts" (Zahavi, 2005, p. 116).

The point of using the what-it-is-like maxim is that "the various modes of givenness (perceptual, imaginative, recollective) differ in their experiential properties" (Zahavi, 2005, p. 124). For instance, what it is like to *see* a dog wag its tail, is different from what it is like to *hear* a cat chasing a mouse, and again, different from how one *remembers* these events.

Crucially, Zahavi introduces the notion of a self to account for the quality of 'mineness' that these different modes of 'givenness' share. Simply put, when I have a conscious experience, it is "given immediately, non-inferentially and non-critically as mine" (Ibid., p. 124). For example, as I see these words appear on the screen in front of me, I am tacitly aware of the 'mineness' of my seeing.

Notably, Zahavi is not stating that conscious experience is something I possess, such as a house or a car. Instead, he means one has a pre-reflective and non-conceptual 'mineness' or pre-reflective consciously experienced ownership, of these various modes of givenness. In other words, tacit awareness of 'mineness' is a means of elucidating the

claim that, in being conscious of x, one is tacitly aware of oneself as being conscious of x. He discloses this pre-reflective and non-conceptual "sense of 'mineness' with a minimal, or core, sense of self" (Ibid., p. 125). The idea of this, "is to link an experiential sense of self to the particular first-personal givenness that characterizes our experiential life; it is this first-personal givenness that constitutes the 'mineness' or ipseity of experience" (Ibid).

Experiences are given tacitly or pre-reflectively as my experiences, as experiences I am undertaking. In other words, experiences are not merely characterised by certain qualitative features, they are also categorised by the fact that they exist for a subject or a self; they feel like something for somebody. The first-personal givenness of experiences therefore involves a basic form of inherent self-reference (Zahavi, 2007a). This is what he means when he states:

> Any account of self which disregards the fundamental structures and features of our experiential life is a non-starter, and a correct description and account of the experiential dimension must necessarily do justice to the first-person perspective and to the primitive form of self-reference that it entails (Zahavi, 2009, p. 560).

This, for Zahavi, is the minimal primary structure on which more robust forms of self can be based. All conscious experience includes self-awareness, yet this is not the self-expounded in the Cartesian sense. The self does not occur apart from or above experience, and for that reason, it is not something that might be encountered in separation from experience. He states, the self is:

> Immersed in conscious life; it is an integral part of its structure. More precisely, the (minimal) self is claimed to possess experiential reality, it is taken to be closely linked to the first-person perspective and is in fact identified with the first-personal givenness of the experiential phenomena. This first-personal givenness of experiential phenomena is not something quite incidental to their being, a mere varnish that the experiences could lack without ceasing to be experiences (Zahavi, 2007a, p. 184).

Instead, one has a minimal sense of self; this is a primary and permeating part of one's experiential life. Indeed, without a minimal sense of self there is no experiential dimension.

To put this in context, one cannot deny that twins have exceptionally entwined relations, however, it is based on a much more minimal or core self, which entails a first-person perspective, and this, crucially, does not allow for the intersecting of each twin's conscious experience or first-person perspective. This is because, whatever their feature,

whatever their object, all experiences are subjective, because they feel like something for somebody.

More precisely, Zahavi, in a discussion of clones demonstrates what happens when we adopt the first-person perspective:

> Although my mental and physical characteristics are qualitatively identical to those of my 'twin', there will still remain a crucial and all-decisive difference between me and him, a difference that would prevent any confusion between the two of us. What might that difference consist in? It obviously has to do with the fact that only my experiences are given in a first-personal mode of presentation to me, whereas the qualitatively identical experiences of my clone are not given first-personally to me at all, and are therefore not part of my experiential life (Zahavi, 2011, p. 68).

Essentially by expounding a minimal or core self, which is located in the 'mineness' of my unique first personal perspective, Zahavi draws a clear distinction between self and other.

As noted above, the we-self is considered to be a form of pathology, which arises as a consequence of each twin's failure to achieve selfhood. Or put differently, a view that pervades our common understanding of twinship is that the self-other distinction is absent or lost. However, when one comprehends self-experience and other-experience within the context of the minimal self these boundaries clearly emerge.

Twins' overlapping and shared experiences may be placed in a we-narrative; however, one could not claim that each twin's first-person perspectives are intertwined. As Farkas says: "Given the difference between our mental lives, perhaps it [is] better to say that the phenomenology of my conscious thought is different from [my twin], […] because [it] involves a different subject" (Farkas, 2008, p. 276). In other words, there is a rudimentary phenomenological difference between twins. To claim the opposite, would be to claim one twin has direct access to the first-person perspective of their co-twin (and vice versa), which is impossible. *Ipso facto*, this certain dimension of inaccessibility is precisely the reason why the other is an other, "because he or she is also a self, with his or her own irreplaceable first-person perspective (Zahavi, 2007a, p. 189).

To claim the opposite is actually quite a radical step, and one which I have clearly revealed is unwarranted. As Husserl puts it, "had I had the same access to the consciousness of the other as I have to my own, the other would cease being an other

and instead become a part of myself" (1950, p. 159, cited in, Gallagher and Zahavi, 2012, p. 204).

**Conclusion: A We-Self or Two Selves?**

Twinship, although highly entwined, is not based on a failed self, which results in a we-self or an over bonded supra-individual unit.

Nonetheless, a twin's self-understanding is obviously shaped by the fact that they are a twin, and thus by the dominant cultural model we have of twinship. Yet, we have also seen that within the twinship, twins have their own self-narratives that they shape in relation to each other—and as should be obvious from the textual evidence—despite overlaps, these self-narratives also differ in significant respects. Many identical twins see themselves as separate individuals; some don't even think they look like their twin! To have an awareness of this sort requires a narrative self that is conceptual and objective, and thus, an explicit awareness of themselves as having a point of view that differs from their co-twin

What is more, because twins are beings who are experiencers of experiences, their distinct but entwined narrative selves are based upon a more basic pre-reflective self or a minimal, non-conceptual self-awareness.

In other words, the we-narrative that twins share, and what is misinterpreted as a we-self, or supra-individual unit, couldn't manifest in the first place without two spatially and temporally distinct subjects of experiences. Or put differently, a highly entwined twinship can only arise as a consequence of each twin having a pre-reflective minimal selfhood which allows for a self-other distinction that forms the basis of their relations and is always maintained thereafter.

It would also seem that those who claim the opposite to be true have merely been working with a limited or unsatisfactory account of what a self is. Thus, it would seem, some twin-researchers need to rethink the models of selfhood that they draw on as these clearly do not properly account for the experience of being a twin.

Instead, it seems, because a twin seemingly falls outside of what a self *ought* to be, we assume the fault must lay with them rather than with our normative or cultural model, and in turn, we end up characterising twinship as pathological. Therefore, it seems fair

to argue that those who misconceptualise twinship as a we-self or a supra-individual unit have done so because they overlook the fundamental structures of selfhood.

As an alternative to these accounts, I put forward the view that the self-other distinction is the basis for twins' highly entwined relations and is always maintained thereafter. In other words, the distinction between self and other must be taken as the starting point in exploring intersubjectivity in twinship.

We are now in a position to outline a primary aim of this project. Shildrick claims:

> Even though some of it may be scientifically dubious, there is here and elsewhere plenty of evidence that monozygotic [identical] twins in general habitually blur the boundaries between one and the other – simultaneously thinking the same thoughts, making the same choices, speaking together as one (Shildrick, 2002, p. 59).

Clearly, I disagree with this claim. Instead, I will continue to demonstrate throughout this project that a self-other distinction is always retained in twin-twin social interaction, even, in cases that demonstrate exceptional intersubjective capacities.

Indeed, in my view, our misunderstanding of the exceptional intersubjective capacities that arise in twin-twin social interaction, have contributed to the view of twinship as a we-self, where the self-other distinction becomes absent or lost. As we have seen, twins are popularly imagined as having some kind of telepathy or extra-sensory perception; some academics even endorse this, while others just tend to mystify it (Case 1991; Sheldrake 2002; Friedman, 2008).

However, in my view, there is nothing mystical or parapsychological about the exceptional intersubjective capacities we find in twin-twin social interaction. Instead, I will show that far more logical descriptions arise once we place these capacities within modified phenomenological and interactionist approaches to intersubjectivity or social cognition. In short, I will argue that a novel type of operative intentionality presents in twin-twin social interaction. This operative intentionality has its genesis in the mutual influencing of body schemas that starts in interactions between twins (particularly monozygotic twins) early in gestation. This accouplement of body schemas continues to develop and form the basis of their interactions post-partum. Thus, what we see is that young twins have developed innovative and highly developed primary and secondary intersubjective capacities which enable them to engage in pre-verbal cooperative interactions that are far more advanced than their singleton peers.

These more advanced primary and secondary intersubjective capacities go on to play a crucial role in older twins' exceptional mutual understanding (EMU), as they utilise these to pre-reflectively exploit the nuanced and implicit narratives that they have helped each other to shape. This, in turn, enables them to have an immediate or intuitive comprehension of each other which is complex.

What is more, in the context of the above, as operative intentionality or pre-reflective consciousness is intimately linked with the 'mineness' or 'ipseity' of experience which entails a minimal form of self-reference, these capacities could not arise without at least a basic distinction between self and other.

Before this, however, it will be necessary to explore more traditional and, until recently, predominant approaches to social cognition, to show why these are not suitable for describing intersubjectivity in twins. Hence, over the next few chapters, we will explore theory theory and simulation theory approaches to social cognition, ultimately with the aim of returning to phenomenological, and interactionist approaches.

# Chapter 3: Theory Theory and Simulation Theory Approaches to Social Cognition

## Introduction

Our present aim is to explore whether or not prominent approaches to social cognition can account for cases of exceptional mutual understanding in twinship.

With this in mind, this chapter seeks to position twins within the frameworks of two philosophical approaches to social cognition. The first account explored is theory theory (TT). Broadly, TT holds that a symmetry or parallelism exists between self-knowledge and other-knowledge, and it is this which enables us to 'mindread' not only the mental states of others but also our own mental states. In other words, theory theorists believe that we draw on the same theory of mind to comprehend our own and others' mental states, and thus reject the view that we have a direct non-inferential access to our own minds. Put crudely, because all mental states are unobservable theoretical entities, one has to appeal to a theory when they want to (explicitly or implicitly) infer such and such a mental state they, or others, are in. With the case of our own mind, we merely have become experts at representing our own mental states, thus we are under an "expert illusion" of self-knowledge.

In this regard, twins seem to present an interesting case for TT. Upon examining first-person accounts of twinship, we can see that they seem to have a direct or a non-inferential access to their own mental states, but they also seem to have, (at least somewhat) of a direct non-inferential access to their co-twin's mental states. Thus, TT allows us to explore the notion that in the case of twins, the "expert illusion" of self-knowledge can be extended to other-knowledge of the co-twin. That is, because they draw on the same theory of mind and spend virtually all of their time together (as children), twins have become experts at automatically postulating each other's mental states.

However, while theory theory accounts do support the idea that we can automatically postulate others' mental states in simple cases, they would reject the idea that we can have an automatic understanding of others' *complex* mental states as this would put too much of a cognitive load on working memory, attention and executive function. Yet, we

seem to find such a phenomenon in twins, that is, in their interactions, they can "rapidly" and "intuitively" grasp each other's complex mental and emotional life.

Moreover, if we follow theory theory's logic for understanding exceptional mutual understanding in twins then that would seem to contradict my claim that a self-other distinction forms the basis for twins' highly entwined relations and is always maintained thereafter.

In order to counteract this view, I explore some of the empirical literature which theory theorists draw on to substantiate the claim that there is a parallelism in self-knowledge and other knowledge, namely, false-belief tasks. From this, we see that the aim of these tasks is to establish at what stage a child can understand that a false belief (i.e. mental state), rather than the state of the world, can cause another person's actions.

To test for this, two types of false-belief tasks have been devised—the Sally Ann task and the Smarties Task. From these, we see that when children are able to recognise that others will have a false belief, they are also seemingly able to remember their own past false beliefs. This forms part of the evidence that supports the claim that we use the same theory of mind (ToM) to understand ourselves and others.

I then turn to the false-belief literature on twins, which is sparse. However, although the authors do not realise it, the empirical data, if accurate, presents a challenge to a central claim of many TT accounts. That is, it contradicts the notion that there is a symmetry in self and other knowledge.

This is because, although twins in Cassidy's et al. (2005) study, had an enhanced specific performance with regards to comprehending the false-beliefs of their twin (but not other same age children), they apparently failed to remember their own past false beliefs. This suggests that, at least in the case of twins, they are not relying on a single cognitive faculty to comprehend themselves and their co-twin. In short, it suggests there is an asymmetry between self and other knowledge, which is consistent with my claim in the previous chapter.

It would seem, then, we need an account of social cognition that respects this asymmetry. Fortunately, one of the rivals to theory theory, simulation theory (ST) seems to do just this. This is because it claims that rather than drawing on a folk psychology to understand others, we instead draw on the direct or non-inferential access

we have to our own mental states to (explicitly and implicitly) simulate other's mental states. Put differently, we are not under an expert illusion of self-knowledge, as simulation theory holds the view that we have a direct non-inferential access to our own minds, and an indirect inferential access to the minds of others.

There are two kinds of ST, one being explicit and the other implicit. With the former, every time we want to understand another we introspect, imagine how we would feel and react to a particular situation and then project those mental states onto that person, in order to understand them. However, when we consult twins' accounts, we can see that they rarely try to comprehend each other in this way. That is, as we have seen, rather than to explicitly or consciously mentalise or simulate each other, twins seem to have a mutual comprehension that is rapid and intuitive.

With this in mind, the implicit version of simulation theory seems to be a more promising candidate, because it claims that in many cases, simulation occurs sub-personally and automatically via expressive phenomena. Hence, on the face of it, this seems to be more in line with twins' accounts as they claim that a simple gesture can allow for a complex understanding of each other. However, the implicit simulationist account runs into similar problems to that of theory theory, outlined above. This is because it claims that it can only account for simple mental states such as emotions, feelings and intentions, while twins seem to be able to intuitively grasp relatively complex mental states such as (so-called) propositional attitudes.

However, not all simulation theorists would defend the position that there is a sharp distinction between implicit and explicit simulation. Instead, they claim that mindreading or simulation can be roughly automatic, roughly conscious, roughly fecund, and roughly reliable. Debates concerning explicit and implicit simulation are discussed extensively in simulationist approaches to empathy. This is fortunate for us, because twins also report that empathy is central to their twinship. Hence, in chapter four, we turn our attention to the nature of empathy.

I conclude the chapter by outlining some criteria that needs to be maintained if we are to account for exceptional mutual understanding in twins.

**Exceptional Mutual Understanding (EMU) in Twins**

As outlined in the first chapter, there is plenty of literature that claims that twins have an exceptional ability to comprehend one another.

As Barron-Hauwaert in her study of bilingualism in siblings remarks: "Twins appear to have a special intuitive understanding of each other, which cannot be compared to ordinary siblings" (2010, p. 144). Similarly, Kohl in her non-academic study states:

> Twins are among the few who are blessed with a special ability to communicate […] [They] themselves tell you that the joy of having one person who truly understands you physically, emotionally and spiritually is one of the most precious and satisfying gifts of their life (Kohl, 2001, p. 62).

There is plenty of anecdotal evidence from both observers of twins, and from twins themselves, which describes twins as having a direct or non-inferential access to each other's mental and emotional life. For instance, as Brenda, older sister of identical twins, Nancy Sipes and Jenna Sipes, explains: "Your communication was on a very different level. Most of the time, you didn't seem to need words. You just had a sense of what the other was thinking and feeling" (Sipes and Sipes, 1998, p. 80). Or as Davis tells us: "Lucy and Linda matter of factly report that they can sit in a room, not say a word and carry on a conversation with each other" (Davis, 2014, p. 122). Similarly, identical twin Bill tells us, "we don't feel like we have to talk. We can relate without talking. It's just natural for us. We can carry on a conversation without saying anything (Kohl, 2001, p. 53).

As we saw earlier, some go so far as to suggest that these instances of exceptional mutual understanding in twins constitute some kind of extra sensory perception, or telepathy. Moreover, we have seen scholars such as Shildrick claim that these instances of mutual understanding are examples of twins habitually blurring the boundaries between one and the other (2002, p. 59). Put differently, twins' exceptional ability to understand each other constitutes an absence or loss of the self-other distinction. As Davis points out, "ESP describes ways of joining or merging the minds [of twins], as in one twin's subjective experience of the other twin's mind and body" (2014, p. 121).

Even some twins seem to see it this way. Consider this account from Jackie Gagnon and Jeannine St. Hilaire:

> ‘We think alike even when we are not together’ said Jeannine. ‘It is like we have the same mind-just split in two, and these two halves are walking around in two different places. Often we say things in stereo. We will be in a conversation and say ‘wow’ together. That is just what talking and thinking in stereo feels like (Kohl, 2001, p. 54).

It seems to me, there are two possible explanations for this: either twins actually do have some form of ESP or telepathy, or they have intersubjective capacities that we all have to a greater or lesser extent, and these just manifest more intensely in twin-twin social interactions.

The first, as I have argued, is highly questionable, and seems to contribute to the notion that twins are failed selves who end up forming a we-self or over bonded supra-individual unit with their co-twin. In my view, it is more likely that the twins in the example above (and to some extent in the other anecdotal examples too), are merely endorsing the dominant socio-cultural narratives of twins. That is not to say, that they do not have an exceptional mutual understanding of each other, but rather, they have interpreted this mutual understanding through the dominant socio-cultural narratives of twinship that we find in our Western social imaginary.

Clinical psychologist, Kate Wood, speaking to the broadcaster ABC news, also does not believe that twins have some kind of ESP or telepathy. Nonetheless, she maintains that there is a closeness between twins, especially monozygotic twins, which means they can very often communicate without language. As she says:

> A lot of what goes on between the twins is implicit and unspoken […] It's a knowing without explaining [i.e. intuition] […] It's more about the intensity of their bond and closeness rather than being witchcrafty or magical (Blumer, 2016, np).

Indeed, as noted, I will argue that far more logical explanations arise for exceptional mutual understanding in twins, once we place their intersubjective capacities in appropriate theoretical accounts, namely, modified phenomenological and interactionist approaches to intersubjectivity or social cognition.

Exceptional mutual understanding clearly plays a significant role in many twins’ relations. Yet it is not useful, and, indeed, can be quite harmful to understand twins’ relations in terms of ESP or telepathy, as it seems to contribute to the view of twins as being pathologically interdependent.

In opposition to the view that twins have some kind of telepathy or ESP, which blurs the boundaries between self and other, I have argued that there is a rudimentary experiential difference between each twin. To be more precise, the phenomenology of each twin's conscious life is different because they are spatially and temporally distinct subjects of experience. In other words, twins do not experience their co-twin in the same manner as their co-twin experiences themselves, because there is an asymmetry between self and other.

If this is the case, then how are we to account for these instances of exceptional mutual understanding in twinship? Is there a way to account for this, without having to resort to ESP? Can we do justice to this while still respecting the self-other distinction?

As noted, I will later draw on both phenomenological accounts of intersubjectivity and interactionist accounts of social cognition, to do this. However, for now, it seems important to engage with, until recently, dominant theories of social cognition, to show why these are not suitable for describing exceptional mutual understanding in twins, and perhaps, why these accounts do not—as far as I know—offer such an explanation of the intersubjective capacities found in twin-twin social interaction. Moreover, these will allow us to better comprehend why phenomenological and interactionist approaches provide a better alternative to these accounts, as we will be able to explore the fundamental assumptions, which distinguish these accounts from each other.

Somewhat ironically—within social cognition research, a widely held view is that one of the primary ways in which we make sense of other people is by 'mindreading' them. Mindreading in this sense does not refer to the popular notion we find in non-theoretical accounts of twins, namely, that they have some form of ESP or telepathy.

Rather, it denotes our very mundane capability "to identify the mental states of others, for example, their beliefs, desires, intentions, goals, experiences, sensations and also emotion states" (Goldman and Sripada, 2005, p. 193). However, those who hold that we have such an ability, and that it founds our most fundamental way of comprehending the mental states of others, are in disagreement, "about how we mindread: what the most fundamental or common strategies or procedures for reading others' minds might be" (Overgaard, 2017, p. 49). Two broad proposals have been put forward in varying as well as in hybrid forms, to account for these common strategies or procedures, namely, theory theory and simulation theory.

We will return to simulation theory later in the chapter. In the next section, we explore theory theory accounts, to see if they can adequately account for exceptional mutual understanding in twins. After examining the central theoretical assumptions of theory theory, I put forward a hypothesis that seems plausible for explaining exceptional mutual understanding in twins. More precisely, I suggest that twins are under an expert illusion with regard to accessing their mental states, and with regard to accessing their co-twin's mental states. This means, while it seems that they have a direct and non-inferential access to their own mind and to the mind of their co-twin, this is merely an illusion. Instead, they have become experts at automatically postulating their own and their co-twin's mental states.

However, upon further examination of the TT literature, we see that it does not support the idea that we can have a swift and rapid comprehension of another's *complex* mental life, as this would put too much of a cognitive load on working memory, attention and executive function. Moreover, upon examining the false belief literature on twins, we see that there is evidence to contradict the notion that there is a symmetry in self and other knowledge—a central claim for many theory theorists.

**Theory Theory**

According to theory theory, one reads the mental states of others by using a theory of mind (ToM), or a rich body of knowledge about mental states, or what is referred to as a folk psychology (Röska-Hardy, 2009; Schwitzgebel, 2010; Marraffa, 2012).

This allows one to infer how these mental states are associated with observable behaviour, events in the environment, and other mental states. Overgaard clarifies:

> Feeding current perceptual or other information (e.g., about another person's brow-knitting) into the stored information (which e.g. connects brow-knitting with anger) allows mindreaders to infer what mental state the other is in (e.g. anger) (Overgaard, 2017. p. 49).

Theory theorists can broadly be divided into two camps vis-à-vis the nature of what the theory consists. (i) The theory in question is conceived by one side "as a set of generalizations or laws for the deployment of mental concepts, as a theory analogous to any empirical scientific theory" (Röska-Hardy, 2009, p. 4064). Commonly known as the child scientist or theory formation account, it holds that our ToM is primarily the result of observation, testing, and learning, as a child's development is analogous to scientific

advancement (Gopnik and Wellman, 1992). (ii) Modular theory, generally holds that we are already born with a special purpose body of knowledge contained in a mental 'module' that is activated or comes online at particular points in children's development (Leslie, 1994; Baron-Cohen, 1995).

Nonetheless, broadly, theory theorists agree that our knowledge of (all) minds is theoretical, inferential (implicitly or explicitly), and quasi-scientific in nature. Both camps view mindreading as a matter of inference to the best explanation and prediction of behavioural data and argues that mental states are unobservable and theoretically postulated entities (Zahavi, 2004, p. 36). Here are some illustrative samples from both factions:

> [Children's theories of mind] involve appeal to abstract unobservable entities... (Gopnik and Wellman, 1992, p. 148)
>
> I have no problem in applying the term theorist to the child in this case, as it is uncontroversial that the concept of intentionality, once acquired, works for the child in very theory like ways - it allows explanation and prediction of behavior, by reference to unobservable entities (mental states) (Baron-Cohen, 1993, p. 30).
>
> One of the most important powers of the human mind is to conceive of and think about itself and other minds. Because the mental states of others (and indeed of ourselves) are completely hidden from the senses, they can only ever be inferred. (Leslie, 1987, p. 139)

TT doesn't just claim that we utilise a theory of mind to predict and explain the mental states of others, theory theorists also claim that we use the same theory to represent our own mental states. In short, it disregards the common-sense view that we have a privileged or direct access to our own minds.

Taking their point of departure from Sellars (1956) theory theorists claim, we come to know our own beliefs and mental states just like we have come to know the beliefs and desires of others. While there is some contention on this point (Robbins, 2006; Schwitzgebel, 2010), Marraffa explains: "For most theory-theorists, first-person mindreading is an interpretative activity that depends on mechanisms that capitalize on the same theory of mind used to attribute mental states to other agents" (2012, np; see also, Schwitzgebel, 2010).

Hence, it would seem, both self-knowledge and other-knowledge are derived from a single cognitive faculty. Put differently, we are dealing with a process of mindreading, because in order to gain self-knowledge and other-knowledge, one must utilise the same

theory of mind or folk psychology. Hence, according to what Zahavi labels a "theory-theory account of self-awareness […] access to my own mind depends on the same mechanisms that I use in attributing mental states to others" (Zahavi, 2004, p. 38). Therefore, there is a symmetry between self-knowledge and other knowledge, because, our access, understanding, and knowledge of ourselves and others are theory mediated (Carruthers, 1996c, p. 3, 2011, p. 2; Gopnik, 1993, p. 3; Frith and Happé, 1999, p. 7).

Although it may appear that I perceive my own mental states directly and non-inferentially, this direct perception is merely an illusion. As Czyzewska and Lewicki point out, "in the perception of their own 'minds', all people are subject to 'expert's illusions'" (1993, p. 38). Gopnik and Meltzoff elucidate:

> Even though we seem to perceive our own mental states directly, this direct perception is an illusion. In fact, our knowledge of ourselves, like our knowledge of others, is the result of a theory, and depends as much on our experience of others as on our experience of ourselves (2006, p. 168).

Consequently, self-consciousness or knowledge of our own mental states is analogous to theoretical objects in the sciences. Carruthers illuminates:

> Just as a physicist can sometimes (in context, and given a background of theoretical knowledge) *see* that electrons are being emitted by the substance under study; and just as a diagnostician can sometimes *see* a cancer in the blur of an x-ray photograph; so, too, we can each of us sometimes see (that is, know intuitively and non-inferentially) that we are in a state accorded such-and-such a role by folk-psychological theory (1996a, p. 26; 1996b, pp. 259-260).

Just like the diagnostician becomes an expert at identifying cancer in an x-ray, we become experts at mindreading our own mental states, so much so, that we falsely believe that these mental states are given intuitively and non-inferentially.

Considering what has been elaborated upon, perhaps we can now shed some light on cases of exceptional mutual understanding that arises between twins within the framework of theory theory. That is, if we draw on the same theory of mind to interpret our own and others' mental states then we could plausibly extend the expert illusion of self-knowledge to also encompass other-knowledge of the co-twin.

More precisely, one could hypothesise that twins have become experts at both representing the mental states of themselves, and their co-twin, because (i) they spend virtually all of their time together as children, and (ii) because they both use a single mindreading faculty to understand themselves and others.

It could be interpreted as such, if we consider what twins have to say about their mutual understanding. For example, identical twin Tara explains:

> It is not really a feeling. It's just we know each other and how the other thinks […] When something happens or is going to happen around us, we can just look at each other and automatically know what the other person is thinking (Kohl, 2001, pg. 52).

Hence, we could say, although their mutual comprehension appears to be given to them non-inferentially or directly, really, these twins are only under an illusion, and this is due to the nature of mindreading, as outlined by theory theorists. In other words, these twins have duped themselves into thinking they have a direct access to their own mind and (at least somewhat of) a direct access to the mind of their twin. This is an illusion; if one follows the logic of theory theory, we can see that twins are actually extremely effective at utilising the same theory of mind to rapidly, or automatically, postulate unobservable theoretical entities or mental states.

However, we have seen many twins report a *complex* understanding of each other's mental life that is given to them intuitively or non-inferentially. Yet, if one examines recent ToM literature, a complex understanding of anothers' mental state is not considered to be a rapid or automatic process (Keysar, Lin and Barr, 2003; Apperly et al., 2006; Back and Apperly 2010; Kovács, Téglás, and Endress, 2010; Kovács et al., 2014; Lin, Keysar and Epley, 2010; Surtees and Apperly 2012; Surtees, Butterfill and Apperly, 2012). Butterfill and Apperly, for example, claim that it is implausible to hold that we can deploy complex concepts in a rapid and automatic way, as they note:

> Consider what is involved in representing beliefs and other propositional attitudes. On any standard view, propositional attitudes form complex causal structures, have arbitrarily nestable contents, interact with each other in uncodifiably complex ways and are individuated by their causal and normative roles in explaining thoughts and actions (2013, pp. 609-610).

Therefore, tracking perceptions or beliefs is not always automatic because apparently it involves representing "propositional attitudes as such", which place demands "on working memory, attention and executive function that are incompatible with automaticity" (Ibid.).

On the other hand, we have seen that twins seem to be able to grasp each other's complex mental and emotional life in such a manner. As the linguist, David Crystal, while commenting on the conversational abilities of twins, notes:

> Observers have been struck by the *intuitive* way in which one twin is able to respond very *rapidly* to what the other has just said, and how the first twin is able to *anticipate* when to stop. They very seldom talk at the same time […] They know each other's rhythms, and each is able to *predict* a great deal of what the other is likely to say (1987, p. 247; 1989, np, my italics).

Hence, it would seem that many theory theorists would not support the hypothesis I have set out above, as they do not recognise that one can grasp another's complex mental life in a swift and rapid manner.

Moreover, the idea that there is a parallelism in self-knowledge and other-knowledge would seem to contradict my earlier argument, that there is a basic distinction between self and other, which is central to understanding twinship. In other words, if we are going to extend the so-called "expert illusion" to both a twin's knowledge of themselves and knowledge of their co-twin, then it would be hard to avoid the charge that the self-other distinction becomes lost or absent in twinship. Put differently, I have argued that a twin cannot experience their co-twin in the same manner as their co-twin experiences themselves, and on the face of it, that is what a theory theory interpretation of exceptional mutual understanding in twins, seems to suggest.

Nichols and Stich (2004) in their now influential paper, outline three ways in which one can potentially understand a theory theory account of self-awareness.

The first is closely related to the point I have made above; as theory theory is a third-person observational account of how we come to know our own and others' mental states. It could be taken as claiming that the only information we have about these mental states are types of evidence that others have too, namely, observable bodily behaviour. Yet, they are reluctant to argue that any theory theorist would actually endorse this account as it would amount to an implausible kind of behaviourism. So, it would seem, at the very least, a twin cannot experience their co-twin in the same manner as their co-twin experiences themselves. Yet, at this point, it becomes unclear how we would maintain the kind of parallelism that is a central component in many theory theory accounts (Nichols and Stich, 2004, pp. 306-307).

Nichols and Stich then move to explain version 2. That is, in utilising a theory of mind to infer conclusions about one's own mind, there is information in *addition* to the information that is provided by perception and background beliefs. Moreover, this *additional* information is only available in first-person cases, and not in third-person

cases. However, as they state, "unfortunately, advocates of the TT [theory theory] say very little about what this alternative source of information is. And what little they do say about it is unhelpful to put it mildly" (Ibid., p. 308).

In the final version outlined, they say one might claim that in terms of one's self-knowledge, the additional information that is offered is information about their own mental states. However, if this is the case, if there is available information about one's own mental states from the beginning, then there is no need to introduce a theory of mind mechanism to account for these mental states (Ibid., p.310).

Hence, it would seem, at least on Nichols and Stich's account, there is not a parallelism in a twin's understanding of her own mind and the mind of her co-twin's, since they do not have the same access to the *additional* information that is given in first-person cases, namely, information about their own mental states.

Moreover, there is also empirical literature on twins, based on the theoretical framework provided by theory theory, which contradicts the notion of a symmetry in self and other knowledge. However, before this can be demonstrated, it is important to understand the empirical evidence that theory theorists use as proof for their claims.

**False-Belief Tasks**

Theory theorists utilise empirical data that allegedly substantiates their claim of a symmetry or parallelism for self and other knowledge. More precisely, a number of experiments were devised to test for the presence of a theory of mind in children, which generally fall under the label—false-belief tasks.

The rationale behind the false-belief tasks is illustrated by a number of commentators on Premack and Woodruff's (1978) influential paper, 'Does the chimpanzee have a theory of mind?'; supposing one would want to know if a chimpanzee had the capacity to infer the mental states of others. As many commentators, including Dennett (1978), agree, it is not enough to show that person A can predict the actions of person B. Since, in many instances, person A can do this without having to infer person B's mental states, but by merely observing the actual state of the world. As, Bloom & German elucidate:

> Suppose A knows the chocolate is in the basket and observes B searching for food. A might expect B to look in the basket, not because A is attributing a

> belief to B, but because the chocolate actually is in the basket (Bloom and German, 2000, p. B26).

A more thorough way to test for this capacity consists of testing for an inferred mental state in another person or animal that differs from the actual state of the world. In short, testing for the presence of false-beliefs. This would demonstrate that one is capable of discerning that it is the mental state, rather than the state of the world, that causes the action (Dennett, 1978).

Accordingly, Wimmer and Perner (1983), utilising this rationale, conceptualised a false-belief task that could be used to test for a ToM in preschool and school-age children. In order to be simple enough to allow researchers to test for false-beliefs in children with autism, Baron-Cohen, Leslie, and Frith (1985) developed a version called the Sally Anne task, which has become the standard version of the false-belief task.

Also known as the change of locations task, Baron-Cohen, Leslie, and Frith (1985) show the child a doll who represents a character named Sally. Before departing the scene, Sally leaves some chocolate in a basket. While Sally is gone, another doll, who represents a character called Anne, removes the chocolate from the basket and puts it in her box. Children are then asked to predict where Sally will look for the chocolate upon returning to the scene. It seems that four-year-olds tend to be able to acknowledge that Sally has a false-belief, as they predict she will look in the basket, while children below that age fail to do so (Baron-Cohen, Leslie, and Frith 1985; Wellman, Cross and Watson, 2001).

The unexpected contents task, sometimes called the smarties-task, is another popular method used to test for a theory of mind in children. These tasks typically take the form of showing children a familiar container like a smarties tube, soliciting their beliefs about its contents, and then revealing that the container has a different content (usually pencils). Again, children of four years and above typically succeed at this task, while those of three years or younger do not (Wellman, Cross and Watson, 2001).

As mentioned, theory theory is not just concerned with how we detect the mental states of others; it is also concerned with how we comprehend our own mental states. Thus, in order to test for the existence of a symmetry in self-knowledge and other-knowledge, some experimenters utilised a novel version of the smarties-task.

Again, children are shown a smarties tube, which contains pencils. They are first asked about what others will think is in the smarties tube, and soon afterward, they are asked: "When you first saw the box, before we opened it, what did you think was inside it"? The majority of 3-year-olds said that they had initially believed that it contained pencils. Apparently, they fail to remember their own past false-beliefs. Thus, it would seem, 3-year-olds have as much trouble understanding their own past false-beliefs as they have in comprehending others' false-beliefs. Gopnik explicates:

> [C]hildren's reports of their own immediately past psychological states are consistent with their accounts of the psychological states of others. When they can report and understand the psychological states of others, in the cases of pretense, perception, and imagination, they report having had those psychological states themselves. When they cannot report and understand the psychological states of others, in the cases of false beliefs, and source, they report that they have not had those states themselves (1993, p. 9).

This is further supported by Wellman, Cross and Watson's meta-analysis which claims across all studies: "[non-autistic] Children's correct responses to false belief questions for self versus other did not differ and were virtually identical at the younger ages" (2001, p. 665).

The results of these studies have led many to argue that children undergo a radical shift in their understanding of the mind. For example, Gopnik claims that at around age 4, there is an important developmental shift to a representational model of the mind (1993, p. 1). Wimmer and Weichbold state that it is not until the age of about 4 years that children are able to attribute belief states to themselves and other people (1994, p. 45; see also, Flavell, 1988, p. 247). Thus, according to this view, failure at the false-belief tasks outlined purportedly reflects a serious deficit in one's understanding of their own and others' mental lives—a deficit in theory of mind.[3]

**False-Belief Tasks and Twins**

How much research has been carried out on ToM development in twins? Does it support the earlier hypothesis? In other words, does it support the notion that twins use the same theory of mind to ascertain self-knowledge and other-knowledge?

[3] Apparently, this is the case for autists (see, Baron-Cohen, Leslie, and Frith 1985; Frith and Happé, 1999).

As noted above there is much evidence to suggest a twin has unique access to the mental states of their co-twin. However, while there is a vast amount of material within the ToM debate it would seem the literature for the most part tends to ignore ToM development in twins. To my knowledge, other than studies which have used twins as an experimental apparatus (Robinson and Mitchell, 1995), there are only three papers which examine ToM in twins. Hughes and Cutting's paper focuses on the heritability of ToM or the genetic influence on young children's understanding of mind (1999, p. 429), hence, it does not shed light on ToM development in young twins.

However, Cassidy et al. (2005) and Deneault et al. (2008) studies do examine ToM development in twins. Specifically, Cassidy's et al. study was concerned with the correlation between the number of siblings that one has and their performance on standard false-belief tasks (2005, p. 97). Basing their hypothesis upon previous studies of sibling influence on ToM development (Peterson, 2000), the investigators initially suggest: "ToM might be particularly well developed in twins because intuition suggests that they are likely to spend nearly all of their time in each other's presence" (Cassidy et al., 2005, p. 99).

To test this, Cassidy et al. recruited 72 children that they divided into four groups for comparison: children with no siblings; twins with no siblings (other than their twin); children with siblings; and twins with siblings. All of the children participated in three false-belief tasks, consisting of one change of location task, and two unexpected contents tasks.

According to them:

> Contrary to our initial speculation that twins' abundant exposure to a sibling might facilitate ToM performance, the twin only group's ToM composite score (M 5 2.4) was virtually the same as that of the only children (M 5 2.2), the group that consistently demonstrates the poorest performance on false belief tasks. Having a twin, then, predicted no advantage in ToM (Cassidy et al., 2005, p. 103).

They claim that the data they present demonstrates that having another sibling is merely a sufficient, and not a necessary, condition for the sibling effect to work as a catalyst for ToM development:

> One must also have a sibling with exposure to a mind or minds different from one's own. The twins' poor performance suggests that rather than the absolute

> time spent interacting, this mismatch in perspective may be the salient ingredient in the sibling advantage (Ibid.).

Hence, the main conclusion of Cassidy et al. does not seem to support their own earlier hypothesis, because apparently the perspective of twins is too alike to act as a catalyst in ToM development.

However, it is rather unclear what exactly the authors mean by exposure to a mind, or minds, different from one's own. In other words, they refer to the similarity of twins' minds at several points throughout the paper yet are never clear about what exactly they mean by the term. They do at some points refer to the differing cognitive capacities of older siblings but never explicitly use the phrase similar cognitive capacities with regards to twins. Rather, they articulate twins in terms of "alike minds" and emphasise the need for different perspectives in allowing for the developing of ToM.

Indeed, they seem to be endorsing the assumptions we find regularly in theoretical and non-theoretical accounts of twins. Moreover, it would seem they have intentionally made this an ambiguous claim, because they are not only referring to twins' developmental similarity, but also their apparent genetic and environmental similarity.

However, due to methodological limitations they could not make explicit claims on these matters, since, genetic assessment was not available, nor were there sufficient parental reports to allow them to differentiate twins into dizygotic (fraternal) and monozygotic (identical) groupings (Cassidy et al., 2005, p. 99).

In their study, Deneault et al. seem to implicitly take issue with Cassidy's' et al. failure to undertake a genetic assessment of the twin subjects, when they ask:

> To what extent does the other mind have to differ? Is a DZ [dizygotic] twin's mind more ''different'' than a MZ [monozygotic] twin's when it comes to learning how other minds work? Although some similarities exist between MZ and DZ twins, many findings suggested that the nature of the relation in MZ and DZ dyads may not be easily generalised from one group to the other (2008, p. 698).

Deneault and colleagues aimed to put Cassidy and colleagues claim to the test, by exploring in what way genetic similarity may affect ToM development in dizygotic and monozygotic twins. Hence, one of the main objectives of the study was to ascertain if the dizygotic twins were better than monozygotic twins were at comprehending false beliefs in others.

Following Cassidy's et al. logic, they postulate that because dizygotic twins' minds are less similar, they would be more advanced at distinguishing false-beliefs than monozygotic twins. However, their data did not prove to correlate with their hypothesis. Instead, they found that the "performances […] of children with a MZ twin and of children with a DZ twin did not differ" (Deneault et al., 2008, p. 704). Moreover, not only did their data confirm no significant advantage of dizygotic twins over monozygotic twins in identifying false-beliefs, but, "our results did not reveal any difference between twins and nontwins" (Ibid, p. 705). Hence, the limited empirical data seems to contradict each other in terms of ToM development in twins.

Conflicting data is not the only concern that arises when examining false-belief literature on twins. Cassidy et al. fail to consider that some of the empirical data they present, if accurate, seems to undermine the theoretical literature that underpins their research. They even present data that contradicts their own conclusion:

> An interesting finding in the present study was that the twins, who performed rather poorly at false belief tasks in general, did markedly better when the false belief in question was that of their twin instead of that of a friend (Cassidy et al., 2005, p. 104).

It is curious that they did not use this data to support their original hypothesis, namely, abundant exposure to one's twin would allow ToM to be well developed. However, it would seem that if they did, it would only undermine their conclusion regarding the importance of differing minds for ToM development. In order to negate the charge that their claim may have been fallacious, they explain this in terms of what they call Level 1 and Level 2 competency. As they say:

> [I]t may be that the twins' recognition that another mind holds a false belief (Level 1 competency) does not necessarily permit them to describe that belief accurately (Level 2 competency), except when the mind in question is one intimately known to them (i.e., that of their twin). Thus, although exposure to less familiar minds may be most efficacious for the development of ToM skills, these skills in their nascent state might be more easily applied to minds that children know exceptionally well (Ibid, p. 105).

However, if this is the case, then this data would seem to indicate problems for one faction of the theory theorists.

More precisely, as we have seen, modularists claim that the core of our theory of minds is innate. In support of this, they cite evidence that suggests that ToM is culturally universal (Frank and Temple, 2009). Another, perhaps more compelling, piece of

supporting evidence that they often cite, is the notion that children reach the same theory at the same age (Carruthers, 1996a, p. 23). In other words, because the theory is hardwired into a module, when it comes online, a twin should be able to predict everyone's false-belief—not just their co-twin's. In short, if the twin-only group were able to identify the false beliefs of their co-twin then they should have been able to do the same for their friends. However, in Cassidy's et al. study the twin-only group were seemingly incapable of discerning the false beliefs of their friends yet had a "twin specific enhanced performance" (2005, p. 105).[4]

The theory formation account, on the other hand, it seems, would not encounter the same issue as the modularists, as they do not endorse the idea of "theory like modules" coming online at particular stages. Rather, as Gopnik points out: "The theory-formation [child-scientist] theory proposes that there are powerful unconscious cognitive processes that revise already existing cognitive structures in response to evidence" (1996, p. 172). In other words, it may well be that the twin-only group, due to a number of environmental factors (i.e. lack of interaction with older children, less time with parents, see, Thorpe et al., 1991; Thorpe, Rutter and Greenwood, 2003), develops an idiosyncratic ability to discern the false-beliefs of their twin, due to a limit in the amount of evidence necessary to develop a broader ToM.

However, the theory-formation account also encounters issues when faced with other data presented by Cassidy's et al. study. Indeed, situating twins within theory theory more generally seems to be undermined by the following passage:

> This twin-specific enhanced performance was curious in that it occurred even though the twins were not particularly proficient at answering after-the-fact questions about their own earlier false beliefs (i.e., "What did you think was in the Band-Aid box before you looked inside?") Children who have not yet developed ToM typically answer this question incorrectly, and a majority of the twins also answered it incorrectly, in spite of their relative strength at predicting the false beliefs of their twins (Cassidy et al., 2005, p. 105).

As touched upon, the after-the-fact questions are a central piece of evidence that many theory theorists use to claim that there is a parallel in our development of a theory of mind. Hence, it is this that allows these theorists to claim that we utilise a single cognitive faculty to represent our own mental states, and the mental states of others.

[4] I am not claiming that Cassidy's et al. research is underpinned by modular theory; nevertheless, the data presented contradicts some claims made by modular theorists.

Yet, as we have seen, the findings presented by Cassidy et al. dispute these previous studies, as they state:

> This finding contradicts the result shown by Wellman, Cross, and Watson (2001) in their meta-analysis that virtually all of the studies they included demonstrated no differences in false belief performance for self versus others (Ibid.).

However, in my view, they do not go far enough, or they do not recognise—if accurate—their findings present a challenge to the theory theorist's claim that self-knowledge and other-knowledge is presupposed by the same theory of mind. In other words, the twins' ability to discern the false-belief of their twin, but not recall their own past false-belief, suggests that—at least in the case of twins—they are not relying on a single cognitive mechanism to determine self-knowledge and other-knowledge.[5]

Instead, Cassidy et al., seem to follow a route that many researchers take when they run into issues when investigating twins (see previous chapters). That is, rather than claiming that something may be at fault with the theory underpinning their research, they instead assert that twins must in some way be lacking. Consider this:

> It may be that twins represent a *singular exception*, perhaps because for twins the 'other' in question is a mind on whose workings they have had uniquely abundant opportunities to reflect (Ibid., my italics).

Now, I am not denying that twins' ability to comprehend one another may differ in some ways, but equally I would be reluctant to claim that their so-called ToM development is so different that it represents an exception to one of the predominant theories of social cognition. I would instead argue that said theory needs either to be expanded in some way or abandoned in favour of a better approach.

It seems fair to argue at this point, that twins are not under some form of expert illusion when perceiving the mental states of their twin, nor does it seem that they are under an expert illusion when perceiving their own mental states. Put differently, it challenges the existence of a parallelism that is central to many theory theory accounts.

In fact, it would suggest the opposite of this view, that is, rather than there being a parallelism (symmetry), there is instead an asymmetry between how one perceives their

[5] Of course, the empirical evidence is limited. Deneault et al. (2008) did not administer the after- the-fact question in their study so the only current evidence for this, is from Cassidy's et al. (2005) research. Nonetheless, it provides evidence against a claim central to many theory theory accounts.

own mental states and the mental states of others. Moreover, this would be consistent with my earlier argument regarding the importance of maintaining the self-other distinction for understanding the intersubjective capacities that we find arising in twin-twin social interaction.

Hence, it would seem that we need an account of social cognition that respects this asymmetry. That is, we need an account that does not hold the view that there is a symmetry in how we access our own and others mental states. Fortunately, one of theory theory's main rivals holds such a position, and for that reason, in what follows we shall explore simulationists approaches to social cognition.

However, I should make it clear at this juncture: I am not turning to simulation theory to explain the data presented in Cassidy's et al. (2005) study, more precisely, the data that shows that twins were able to predict the false-belief of their co-twin and not remember their own. It merely has been utilised as evidence against the notion that there is a parallelism, or a symmetry, in self and other knowledge.

To rearticulate, the aim of this project is to investigate the exceptional intersubjective capacities we find in twin-twin social interaction, and thus, I am not particularly concerned with a narrow focus on false-belief understanding. The false-belief task, as Bloom & German remark, "should be considered in its proper context. It is an ingenious, but very difficult task that taps one aspect of people's understanding of the minds of others. Nothing more, nothing less" (2000, pg. B30)

**Simulation Theory**

Broadly construed, simulation theory maintains that one uses one's own mental processes to attribute mental states to others, without utilising theoretical knowledge. In other words, this account maintains that there is not a parallel in how we ascertain knowledge about ourselves and others because we do not use a folk psychology to explain and predict mental states. Instead, it claims, we have a privileged access to our own mental states; while the other's mental states are hidden, and thus unobservable. Hence, the central claim is that individuals utilise their own cognitive mechanisms to generate predictions and explanations of other persons' thoughts and behaviour, drawing on their capacity to mimic or replicate others' reasoning and decision-making; they do not deploy a theory (Röska-Hardy, 2009, p. 4066).

There are two primary accounts of ST; one involves an implicit or sub-personal modelling of one's mental state on that of another, and the second being the explicit modelling of someone's mental state in order to get a sophisticated understanding of them (Goldman, 1989; Ratcliffe, 2013a). For now, we shall concentrate on the latter.

For Goldman, our ability to comprehend the minds of others is facilitated by our introspective access to our own mind. In other words, our capacity for self-ascription precedes the capacity for other-ascription. More precisely, Goldman claims that our understanding of others is enabled by one's capability to project themselves imaginatively into the other's situation. Literally, one utilises their imagination to place themselves into the target's 'mental shoes'. For example, if I witness a woman being 'cat called' by a group of men on the street, I would be able to comprehend said person's state of mind and predict her subsequent behaviour by way of the following process. I would explicitly simulate her experience by imaginatively putting myself in her situation, I would imagine how I would feel and respond in such a situation, and on the basis of analogy I would then project those states to the person I am simulating (Goldman, 2000; Gallagher and Zahavi, 2012). Here is Goldman's step-by-step account of the procedure:

> First, the attributor creates in herself pretend states intended to match those of the target. In other words, the attributor attempts to put herself in the target's 'mental shoes'. The second step is to feed these initial pretend states [e.g. beliefs] into some mechanism of the attributor's own psychology ... and allow that mechanism to operate on the pretend states so as to generate one or more new states [e.g. decisions]. Third, the attributor assigns the output state to the target (2005, pp. 80–81, cited in, Gallagher and Zahavi, 2012, p. 195).

When it comes to the explicit version of simulation theory, one may raise the simple question: is there any experiential evidence that supports the claim that our understanding of others relies on conscious simulation procedures?

As Gallagher and Zahavi point out, "consider that on most versions of explicit ST, the claim is that simulation is not only explicit but pervasive" (2012, p. 196). In other words, apparently, we use conscious simulation routines all of the time, and thus, it is our default way of understanding others (Goldman, 2002, pp. 7–8). Yet, as they point out, "if simulation is both explicit and pervasive, then one should have some awareness of the different steps that one goes through as one consciously simulates the other's mental state" (Gallagher and Zahavi, 2012, p. 196). A simple objection to explicit

simulation theory, then, is when I experience the mental and emotional lives of others; the experiential evidence is limited. Put differently, many persons would claim that, they do not use explicit (imaginative or introspective) simulation procedures in their ordinary comprehension of others. The same is true for twins.

Earlier in this chapter, it seemed plausible to interpret identical twin Tara's mutual understanding with her co-twin within the framework of theory theory, as it allowed us to explore the idea that they are merely under some type of expert illusion. In other words, rather than having a direct non-inferential access to each other's minds, Tara and her twin (Christine), have merely become experts at drawing on the same theory of mind to automatically represent each other's mental states.

However, it would be much more difficult to entertain the notion that they consciously simulate their co-twin in order to gain a sophisticated understanding of each other, as they themselves say—all they have to do is look at each other and they will "automatically" know what the other is thinking. They are not the only twins to describe their mutual understanding in this way. Esther, another identical twin says, "We can understand each other by a look between us or a word which can express a whole thought" (Sipes and Sipes, 1998, p.80). Sipes and Sipes remark: "Twins have a great deal of nonverbal communication and often thoughts are transferred through simple gestures. A raised eyebrow can communicate volumes to one's twin!" (Ibid.).

It is hard to see how an explicit simulation might be at play here. Hence, I am reluctant to say that twins employ explicit simulation routines in order to gain an understanding of one another. Thus far, simulation theory seems an unlikely candidate to account for much of the exceptional mutual understanding that arises between twins.

However, it would seem wrongheaded to claim that it cannot account for at least some instances. Consider this:

> Kim Smith and Cheryl Bodelak remember their early childhood. 'It was amazing to us how we could hide things from each other and then know where to find' Kim agreed. 'As young children I can remember arguing over a Barbie doll or something and Cheryl hid it from me. I couldn't find it anywhere, so I calmly sat down and thought if I were she where would I hide it? Then I went right there and found it'. (Kohl, 2001, p. 59).

This case certainly could be interpreted as an explicit simulation routine. Kim is confronted with a task that has been made intentionally difficult by her sister. In order

to find the doll she must place herself in the 'mental shoes' of her sister. Yet as Gallagher and Zahavi point out:

> [T]hat in itself is telling. It may be the case that confronted with some unaccountable behaviour I do try to understand the other person by running a simulation routine. This is clearly the rare case, however. Moreover, I can easily become aware that I am in fact taking this approach, and it is all the more apparent when I do this, simply because it tends to be the exception (2012, p. 196).

Hence, I would claim that explicit simulation is not the primary means through which twins comprehend one another.

Yet, it may be harder to make this claim for the implicit version of simulation theory. Neurobiologists' discovery of mirror neurons (MNs) in macaque monkeys in the 1980s would pave the way for simulationists to claim that the succeeding neuroscientific evidence involving subpersonal activation of MNs—shared representations, or more generally, resonance systems—supports the idea that we primarily rely on simulations to understand others. Put differently, this allowed simulationists to argue that we do not always consciously project ourselves into other people's mental shoes for the appropriate simulation to occur. Instead a lot of the time this happens subpersonally and unconsciously (Gallese and Goldman, 1998).

If simulation is subpersonal and unconscious, and not something we would be aware of, then it would seem turning to our own experiential domain will not allow us to raise any objections. That being said it also raises an important point, as Gallagher and Zahavi note:

> [The] implicit version of ST is actually an argument against the explicit version of ST. That is, if our understanding of others is in fact mediated by an implicit and automatic simulation process, then we have little need for the more explicit version (2012, p.197).

Undeniably, to the extent that implicit simulation would explain the phenomenological scarcity of explicit simulation in the cases of twin interaction outlined in this chapter, it seems, it would also support the earlier objection against explicit simulation. As Gallese claims:

> Whenever we face situations in which exposure to others' behavior requires a response by us, be it active or simply attentive, we seldom engage ourselves in an explicit, deliberate interpretive act. Our understanding of a situation most of the time is immediate, automatic, and almost reflex like' (2005, p. 102).

This account, thus far, seems to be a much better fit with some of the cases I have outlined. As we saw, for twins, a glance or grimace can allow them to instantly, and automatically, communicate volumes to one another. Indeed, we saw thinkers like Crystal (1987;1989) point out the intuitive and rapid way in which twins are able to predict what the other is likely to say. Similarly, René Zazzo, a French psychologist writing on twins, proposed that the extraordinary abilities of twins to read each other's facial expressions and gestures could mean that they had less need to communicate verbally (1976, cited in, Bacon, 2011, p. 41).

However, I am unsure as to how much implicit simulation can account for in this regard. Goldman (2006) outlines two kinds of mindreading, the first he calls low-level mindreading, this is explicitly associated with implicit simulation, and second he calls high-level mindreading, which is associated with explicit simulation. De Vignemont summarises these for us:

> 'High-level' mindreading is mindreading with one or more of the following features: (a) it targets mental states of a relatively complex nature, such as propositional attitudes; (b) some components of the mindreading process are subject to voluntary control; and (c) the process has some degree of accessibility to consciousness. […] [It] is 'low-level' mindreading because it is comparatively simple, primitive, automatic, and largely below the level of consciousness. It is simple because it targets simple mental states such as emotions, feelings and intentions. It is primitive because of its importance in evolution and also because its underlying mechanism is a mirroring process 'that is cognitively fairly primitive' (2009, pp. 458-459).

If that is the case, then it would seem that implicit simulation cannot account for exceptional mutual understanding in twins, either, because seemingly it can only account for simple mental states. As we have seen, throughout this chapter it appears that twins can understand more complex mental states than emotions, feelings or intentions without having to resort to high-level simulation. In fact, one could claim that twins can comprehend more complex thoughts or (so-called) 'propositional attitudes' through simple forms of expressive phenomena that is usually associated with low-level or implicit simulation, and very often these mental states seem to be given rapidly and non-inferentially or directly.

However, at this point it would also be an error to dismiss simulation theory because there are those who claim the distinction between low-level and high-level simulation to be unreflective of how we mindread. De Vignemont, for example, states:

> More than a dichotomy between two mechanisms with distinct properties, we have seen that low and high-level mindreading constitute a continuum. Mindreading can be more or less automatic, more or less conscious, more or less fecund, and more or less reliable (2009, pp. 464-465).

If that is the case, then perhaps simulation theory can account for the kinds of mutual understanding we see arising in twinship. More precisely, it may be able to account for a twin's relative ease at swiftly and richly comprehending their co-twin's mental life.

For the moment then, I refrain from drawing any negative conclusions on simulation theory. Discussions concerning high-level and low-level simulation are perhaps cashed out most saliently in debates concerning the nature of empathy, and this is where we will turn our attention in the next chapter. Moreover, this will be useful for our study more generally, because a number of twins claim that empathy is fundamental to the relations they share with their co-twin.

**Conclusion**

We have seen our attempt to account for exceptional mutual understanding between twins via theory theory raises a number of problems.

Firstly, while theory theory does allow us to put forward a hypothesis that would explain exceptional mutual understanding in twins, this was undermined by the claims we found in the TT literature regarding the incompatibility of automaticity and the deployment of complex mental states.

Moreover, this hypothesis would seem to undermine my earlier claim regarding the importance of maintaining a self-other distinction in outlining the exceptional intersubjective capacities we find in twins, because it maintains a parallelism in self and other knowledge. However, we saw that Nichols and Stich (2002) outline several criticisms of this view, namely, that it either amounts to an implausible kind of behaviourism, which they do not think any theory theorist would endorse, or, there is additional information available to me about my own mental states. However, if this is the case, then it does not seem necessary to account for these in terms of a folk psychology or a theory of mind.

I then turned to the false-belief literature on twins. While there is a limited amount of research on ToM development in twins, the data, if accurate, presents a challenge to the idea of a parallelism in self and other knowledge. This is because, while twins in the

study were able to discern the false-beliefs of their co-twin, they could not remember their own past false-belief. That is, twins were not able to answer the after-the-fact question correctly, and this contradicts the view that once children are able to detect an other's false-belief, then so too, will they be able to remember their own past false-belief, which indicates a symmetry in self and other knowledge.

It seemed, then, simulation theory may be a more promising candidate, because it endorses an asymmetry in self and other knowledge. In other words, on the face of it at least, it seems to be consistent with my earlier argument that we must maintain the self-other distinction when outlining the kinds of intersubjective capacities we find in twinship.

However, it is not without its problems, as it seems, in the case of twins, they rarely rely on explicit simulation routines to comprehend one another, and the implicit version, although more convincing, can only account for basic mental states such as intentions, emotions and feelings.

That is, although the implicit version of ST allows for the automatic comprehension of mental or emotional states via gestures or expressive phenomena, these are only basic, yet as we have seen with the cases outlined, a simple gesture can communicate volumes to one's twin. In other words, it seems that twins can comprehend more complex mental states such as (so-called) propositional attitudes via expressive phenomena, and, not only this, but it also seems to be a rapid and non-inferential or direct process.

However, not all simulation theorists would defend the position that there is a sharp distinction between high-level and low-level simulation. De Vignemont (2009), for example, claims that mindreading or simulation can be more or less automatic, more or less conscious, more or less fecund, and more or less reliable. As noted, the relation between high-level and low-level mindreading are cashed out most saliently in the debates concerning the nature of empathy, and hence, that is what we will turn to in chapter 4.

Before we proceed, however, it will be useful to outline some criteria that need to be met in order to persuasively account for the exceptional intersubjective capacities we find in twins. Basing these on the academic and anecdotal accounts we have noted above, it seems what is required for a theory which can account for exceptional mutual

understanding in twins must be able to explain: (i), how each twin comprehends a wide range of mental and emotional states via expressive bodily phenomena; and (ii), it would need to explain how a good proportion of these including (at least some of ) the more complex mental or emotional states are seemingly given, (a) rapidly or intuitively, and (b) directly or non-inferentially; while (iii), also acknowledging the importance of the self-other distinction in the manifestation of twinship.

# Chapter 4: Simulationist and Phenomenological Approaches to Empathy

## Introduction

In this chapter we examine varying simulationist approaches to empathy to determine if any of these can meet the criteria I have set out for explaining exceptional mutual understanding (EMU) in twins. We then move to phenomenological approaches to empathy and argue that these accounts are more suitable for describing EMU in twins.

I start by examining Stueber's two route approach to empathy. This, as we will see, encounters many of the same problems outlined with high- and low-level simulation theory in the last chapter. That is, twins can rapidly grasp each other's complex mental and emotional life, which means basic empathy cannot account for complexity, nor can reenactive empathy account for the rapidness in which this happens. However, as noted, not all simulationists would argue there should be such a strict dichotomy between high-level and low-level empathy.

More specifically, I turn to de Vignemont who claims that empathy or mindreading can be more or less automatic, more or less conscious, more or less fecund, and more or less reliable. From this we are able to formulate a hypothesis which seemingly can satisfy the EMU criteria. However, there are two problems with this account. Firstly, while it does provide us with some interesting resources for examining EMU in twins, it ultimately does not provide us with enough for an in-depth investigation. This is because de Vignemont does not develop this thesis in her succeeding work. Moreover, upon closer inspection we see that her account does not satisfy all of the EMU criteria. Put crudely, she claims that context is not something that can be given directly (even at the experiential level). This means one must simulate the normatively relevant features to grasp the other's emotional state. Thus, we would seem to be presented with the same problem that we encounter with Stueber's account, because this does not explain how a twin can rapidly and intuitively grasp their co-twin's emotional and mental life.

Following this, we see that de Vignemont seems to later reject her earlier thesis as she claims, along with Singer and Jacob, that mirror empathy cannot actually be counted as empathy but merely a contagion because one cannot knowingly ascribe an affective state to the target or source. We then further explore these accounts, we see that these

thinkers reject the two-route approach to empathy defended by the likes of Goldman and Stueber, and instead claim that empathy is a purely higher-level imaginative phenomenon. However, we will see that empathy manifests itself in ways that do not meet the strict conditions formulated by these thinkers.

I then move to outline phenomenological approaches to empathy. From this, we will see that phenomenology provides rich and often competing discourses for describing EMU in twins. Moreover, phenomenological approaches to empathy are underpinned by fundamentally different assumptions or presuppositions to those that form the basis for simulation theory and theory theory approaches.

More precisely, in opposition to simulationist approaches (and theory theory), phenomenologists oppose the conceptual separation of body and mind, and therefore disregard the idea that empathy is a two-step process which first consists of a third-person access to observable behaviour, and then, second, a first-person simulation which we ascribe as a mental or emotional state to that behaviour. Instead, we already have a more fundamental second-person access, which allows us to directly experience the embodied aspects of the other's mental and emotional life. Moreover, in contrast to de Vignemont and colleagues above, these embodied mental and emotional phenomena never occur in isolation of context, in other words, they are always embedded in complex contextualised social settings. However, we will see, that while more promising than simulation theory and theory theory, phenomenological approaches to empathy also seem to have some limits when it comes to describing EMU in twins.

More precisely, they claim at a basic level that empathy is perception-like or analogous to perception. This forms part of the argument that we can directly perceive the embodied aspects of the others mental and emotional life. However, while at this elementary level of empathy, we can have an intuitive grasping of the other's experiential life, and this grasping remains basic. In contrast, in twins, we seem to see that they can directly perceive or experience the embodied aspects of their co-twin's mental and emotional life intuitively and this is (at least to some degree) sophisticated rather than basic.

More will need to be done if we are truly to understand this point, hence in the next chapter I examine perception-like empathy as defended in phenomenological accounts,

particularly those expounded by Zahavi and Husserl. I end this chapter by sketching out the final 3 chapters of this thesis.

**Two Routes to Empathy**

If we are to develop a theoretical framework that can best account for intersubjectivity in twins, examining empathy may be fruitful. Certainly, some of the twin literature would corroborate this. For example, genetic epidemiologist, Jeff Craig notes: "There is so much more empathy in twins, if you have someone really close you can feel their pain because of the closeness" (Blumer, 2016, np). Identical twins, Gina and Tina, characterise "empathetic connectedness" as being central to their twinship (Davis and Davis, 2010, p. 137), and Timothy Knatchbull describes his past relationship with his deceased twin as one of "constant companionship and total empathy" (Knatchbull, 2011. p. 10).

It is not just twins who seem to hold empathy as central to their twinship. At least one faction of the simulation theorists claim that empathy is our most common or fundamental form of mindreading, explicitly equating it with simulation (see, Gallese 2001; Goldman, 2006, 2013; Stueber, 2006, 2012).

In their view, empathy and simulation both have at their core the idea of putting oneself in the 'mental shoes' of others. Goldman, for instance, takes mindreading to be an extended form of empathy (2006, p.4), and claims that empathy is perhaps the most common form of mindreading (2013, p. 199). In a similar vein, Stueber claims that "empathy must be regarded as of central epistemic importance and as the epistemic default mode in understanding other agents" (2006, pg. 219), and aligns his thesis regarding the epistemic centrality of empathy "with simulation theory in opposition to theory theory" (2012, pg. 56).

We saw in the previous chapter that Goldman makes a distinction between low-level and high-level simulation. Stueber makes a similar move when he draws a distinction between basic and reenactive empathy. The former is a perceptual phenomenon that "allows us to directly recognize what another person is doing or feeling", when observing their facial expressions or behaviour (Stueber, 2006, p. 147). However, as we have already seen with low-level simulation, basic empathy alone cannot account for the mutual understanding we see arising in twinship. Therefore, at this point, it would seem wrongheaded to claim that basic empathy is what the examples I have provided

are referring too. As Stueber says, basic empathy is not adequate to "explain and predict a person's behaviour in complex social situations" or to provide "a full grasp of all mental concepts that we attribute to the typical adult" (Ibid.).

Consequently, he puts forward the claim that our more sophisticated mindreading abilities are contained within reenactive empathy. Similarly to Goldman's account, he argues that our sophisticated mindreading abilities depend on a higher-order simulation of thoughts or mental states, taken as reasons for action. For Stueber, it is not low-level or basic empathy that is epistemically central, but rather reenactive empathy. As he says:

> We grasp another person's action as a rationally compelling one because we can grasp his thoughts as reasons for acting by putting ourselves in his shoes, by imagining the situation that he faces, and trying to reenact his thought processes in our mind (Stueber, 2012, p.60; see also, Stueber, 2006, p.21).

However, this would seem to bring us back to a similar objection we encountered in examining the explicit version of simulation theory, namely, there is a lack of phenomenological evidence to support the claim that in most cases, a twin needs to explicitly simulate her co-twin to gain a sophisticated understanding of them. As we have seen, very often, twins are seemingly able to gain an instantaneous and relatively complex understanding of one another via observing the expressive bodily phenomena of their co-twin. Therefore, the accounts we have thus far explored are not consistent with the EMU criteria.

Some simulation theorists such as Spaulding (2010) or Jacob (2011) would not be "overly impressed" with my appeal to the phenomenological evidence. They, like Stueber, would most likely reply that arguing that a twin's grasping of their co-twin's emotional life, based on their bodily expressions, appears to "be a non-inferential perceptual act does not constitute a sufficient basis to adjudicate this dispute, since many acknowledge that such inferences are seemingly unconscious and happen on the sub-personal level" (Stueber 2006 p. 17). Thus, as Stueber claims: "Phenomenology cannot be understood as being an infallible guide to the structure of underlying psychological mechanisms" (Ibid.).

However, I am not claiming that the phenomenological or experiential evidence is infallible. What is more, for now, I am willing to concede, that it shouldn't necessarily be used as a guide to explaining the underlying mechanisms that allow twins to engage

in EMU. However, any theory that claims empathy underpinned by simulation is our central epistemic means of understanding other agents, should at the very least be able to explain how such phenomenological or experiential evidence arises, which so far, has not been the case. For example, Stueber, by insisting that a recognition of another's emotion via bodily expressions does not amount to an understanding of that emotion, does not explain why this often seems to be the case for twins. Consequently, it would seem, twins who claim empathy as central to their mutual understanding, are referring to something quite different to the simulationists' accounts thus far provided.

For Stueber it is clear that basic empathy or low-level forms of understanding must be regarded as being knowledge poor as it does not involve a psychological theory or psychological concepts (2012, p. 59). However, de Vignemont, in her analysis of the distinction between high-level and low-level simulation, seems to contradict this, drawing on a number of empirical studies, she claims mirror (basic) empathy can be regulated by top-down factors. Taking a passage from Cheng's et al. study, she states:

> Rather than suggesting that humans respond on the basis of automatically activated stimulus-response linkages, the present findings support the notion that humans regulate their emotions by relying on higher cognitive processes involving knowledge in working memory, long-term memory, and metacognition. (Cheng et al., p. 1712, cited in, de Vignemont, 2009, p. 461)

Hence it would seem, that contrary to Stueber, basic (mirror) empathy can involve a psychological theory or concepts. According to de Vignemont, basic empathy is sensitive to a wide range of factors, some being very high-level. For her, it is very possible that this belongs to a "constructive mechanism that integrates information about the context, about the person, about your relationship with her, etc. before eliciting the empathic response" (Ibid.). In other words, basic empathy can be regulated and guided by knowledge, like reenactive or reconstructive empathy. Moreover, this can enable it to be more fecund or knowledge rich.

De Vignemont provides an example to illustrate this. By observing the colour of someone's cheeks I cannot know if they are blushing because of happiness or shame. However, if I heard someone pass that person a compliment just before I saw their coloured cheeks, I would then know that they are happy due to this act of kindness. Consequently, for her, mirror or basic empathy can be more fecund or knowledge rich, "if it is based not only on bodily cues, but also on contextual cues. And this is what

happens most of the time" (de Vignemont, 2009, p. 464). This seems to be a more promising account, as, if one claims empathy in twinship is underpinned by a mirror-resonance system that is synonymous with simulation and made more fecund or knowledge rich by contextual cues, one could in turn argue that it satisfies the EMU criteria set out at the end of the last chapter.

To rearticulate those criteria, it seems a theory which can account for exceptional mutual understanding in twins must be able to explain; (i), how each twin comprehends a wide range of mental and emotional states via expressive bodily phenomena; and (ii), it would need to explain, how a good proportion of these including (at least some of ) the more complex mental or emotional states are seemingly given, (a) rapidly or intuitively, and (b) directly or non-inferentially; while (iii), also acknowledging the importance of the self-other distinction in the manifestation of twinship.

If we return to an example I provided in the previous chapter we can see why de Vignemont's (2009) paper may satisfy these conditions. Identical twin Tara explains when something happens or is going to happen around herself and her co-twin Christine, they can just look at each other and "automatically" or rapidly grasp each other's mental and emotional states. Concerning (i), because mirror empathy can seemingly be influenced by top-down processes, we could say that each twin's bodily cues are always mediated by contextual factors that are not necessarily limited to what is immediately happening and stored in working memory, but are always enveloped in wider contextual factors that are stored in long-term memory. Thus, this could explain why each twin can comprehend a wide range of mental and emotional states via expressive bodily phenomena. As regards (ii), it is widely accepted that mirror empathy is automatic, hence this would account for (a) the rapid or intuitive aspect, and although simulationists would reject (b), or the direct or non-inferential aspect of this condition, they could account for this in terms of a sub-personal inferential or simulative process that happens below the level or on the periphery of consciousness. Hence, at the phenomenological or experiential level it could seem as if the mental life of Tara's co-twin is being given directly. With (iii), simulation theorists would likely argue that ST emphasises the asymmetry between self-knowledge and other-knowledge, and by default, it acknowledges the importance of a self-other distinction in the manifestation of twinship.

However, an obstacle in endorsing de Vignemont's contextually mediated mirror empathy concerns the fact that this remains an underdeveloped thesis. At no point in her succeeding work does she develop this in the depth that would allow one to confirm whether this view can actually account for the conditions outlined in my interpretation above. Moreover, on closer inspection of de Vignemont's claims regarding mirror empathy, it would seem it cannot account for criterion (ii). Surprisingly, this is due to the very reason that made her claims about mirror empathy appealing in the first place. That is, because mirror empathy is susceptible to top-down modulation and is influenced by contextual cues, it cannot count as a direct process but rather an indirect process—even at the phenomenological or experiential level (de Vignemont and Singer, 2006, p. 437). To put it differently, as context is not something that can be given directly, one must simulate the normatively relevant features to grasp the *why* of the other's emotional state.

Consider Tina walks into the family living room and meets Christine angrily glaring at her while holding a tattered top. According to this account, although she would have what seems like a direct awareness of Christine's anger, she would still be left with the task of figuring out *why* she is angry. Thus, she would have to infer that the tattered top is in fact Christine's latest purchase and the very same one she wore out (and tattered) the night before. While at the experiential level, Tara can automatically recognise the emotion, she cannot rapidly understand that emotion; that is, she cannot have directness and contextuality, at the same time. Put differently, contextually mediated mirror empathy cannot explain why, on the experiential level, a twin can grasp the complex mental and emotional life of their co-twin (a) rapidly and intuitively and (b) directly or non-inferentially.

What is more, while de Vignemont points out that "even mirror empathy [could] result from a complex constructive process" (2009, p. 465), she later claims, along with Jacob, the mirroring approach is inadequate as a form of empathy, because it apparently fails to distinguish an empathetic experience from an experience generated by a process of affective or emotional contagion (Jacob 2011; de Vignemont & Jacob, 2012, 2017).[6] To understand why this is the case, we need to outline how they formulate empathy.

[6] De Vignemont and Jacob's, starts out with a focus on pain and later claim a "twofold account of vicarious experiences was primarily designed to explain empathetic pain, it turns out to be applicable to a wide range of vicarious emotional experiences" (2017, p. 512).

**Empathy as a High-Level Process**

De Vignemont and Jacob see empathy as a wholly higher-level imaginative phenomenon and offer five conditions that one's experience must satisfy if it is to be considered empathic.

> (1). *The affectivity condition*: both target and empathizer experience some affective state.
> (2). *The inter-personal similarity condition*: there is no empathy unless the target's and the empathizer's affective states are isomorphic (i.e., both experience pain or both experience fear).
> (3). *The vicarious state condition*: the empathic state involves an "as if" or vicarious affective state, generated by the empathizer's imaginative portrayal of another person's affective state.
> (4). *The ascription condition*: there is no empathetic understanding unless the empathizer knowingly ascribes the affective state to the target because the target is the source of the original affective state.
> (5). *The caring condition*: the empathizer must be led to care about the target's affective life because of context (Jacob, 2011, p. 523; de Vignemont and Jacob 2012, p. 306, 2017, p. 505).

Apparently, the mirroring approach does not constitute empathy because it fails to meet conditions (4) and (5), and therefore it can only be considered a contagion. De Vignemont and Jacob provide an example to illustrate this.

> Imagine a screaming infant who feels *standard* pain after being injected with a vaccine into his shoulder. Now consider the infant's 6-year-old sister watching the needle penetrate her little brother's shoulder. She tenses up and shrinks as if she were anticipating the pain caused by the needle in her own shoulder. Her vicarious experience of pain is an experience of contagious pain (de Vignemont and Jacob 2012, p. 296).

Apparently, what occurs in mirror empathy is expounded by the example of the six-year-old above. The six-year old meets conditions (1), (2) and (3), because herself and her brother are both in (1) an affective state, (2) the affective state is isomorphic as both are in pain and (3) there is an 'as if' or vicarious quality to the her pain. However, although there is a seemingly direct and automatic experience of the infant's screaming pain, the six-year-old, (4) fails to knowingly ascribe this vicarious pain to her brother, (5) nor does she seem to exhibit any concern for him. By contrast, to illuminate their conception of empathy, de Vignemont and Jacob provide the following example:

> [C]onsider the mother holding her son in her arms. Unlike her daughter, she is not imagining the painful vaccine injected in her own body. Her vicarious experience of pain is an experience of empathetic pain: she is painfully experiencing her son's standard pain. She believes that her son is in pain (Ibid.).

If we follow this account, more issues arise for my earlier interpretation of contextually mediated mirror empathy and mutual understanding in twins. More precisely, criterion (iii) would be compromised, as the mirroring approach to empathy cannot ascribe the affective vicarious state to the co-twin. Hence, it would appear that mirror empathy does not respect the self-other distinction, which as we have seen, is crucial to understanding intersubjectivity in twins. Moreover, if the mirroring approach fails to distinguish an empathetic experience from an experience generated by a process of affective or emotional contagion, then it obviously does not meet (i) or (ii). In short, if Tina must knowingly ascribe the affective state of anger to Christine, then not only is her understanding of the *why* of that anger reliant on an explicit process, so too is her recognition of that anger. In short, we can no longer explain why experientially the mental and emotional life of Christine is ostensibly being given rapidly and directly. Therefore, if one follows de Vignemont and Jacob, the mirror approach to empathy cannot adequately account for the kind of empathy that is seemingly so crucial to the twins referred to above.

However, as we will now see, neither can de Vignemont and Jacob's formulation of empathy. Along with Singer, de Vignemont and Jacob form a faction of simulation theorists who claim that empathy is not our ordinary means of understanding others. Instead, as touched upon, they see it as a purely higher-level imaginative process. For them: "Empathy is a special kind of third-person mind reading, that is, a special affective way of representing and understanding another's affective psychological state" (Ibid., p. 310). To demonstrate this, they label empathy as *affective mindreading* to distinguish it from what they call *standard mindreading*. In contrast to empathy, standard mindreading does not require that both target and empathizer experience or share some affective state. As they say:

> When I perform a standard task of mind reading, I come to believe that you are in some psychological state or other (e.g., a feeling), which I ascribe to you. Thus, I may know what you feel without feeling what you feel (Ibid. p. 305).

Note that, on this formulation of empathy, our stock example, identical twins Tara and Christine's experience would not count as empathic but rather as a case of standard

mindreading. This is because they merely have an exceptional grasp of each other's mental life and do not share affective states. Therefore, they do not fulfil conditions (1) (2), (3) or (5), only meeting (4), the ascription condition, which is not enough for their mutual understanding to be considered empathic. In addition, this formulation of empathy cannot account for exceptional mutual understanding, nor it will it allow us to claim that empathy is central to understanding twinship. Instead, it would seem exceptional mutual understanding in twinship is not synonymous with empathy but rather presupposes it in some way.

As mentioned, Gina and Tina, describe empathetic connectedness as being fundamental to their twinship, and similarly, Timothy Knatchbull describes his past twinship as one of total empathy. However, if one follows de Vignemont and Jacob's formulation, then for these twins' experiences to count as empathy, they would have to constantly engage in an explicit imaginative process that meets a strict set of conditions, which I am sure we can all agree seems absurd. Hence, that leaves us with two options, either de Vignemont and Jacob are wrong about their formulation of empathy, or, whatever the anecdotal accounts are describing is not actually empathy but something rather different.

We cannot provide an answer to the latter option without first exploring some other accounts of empathy, so let's begin by exploring criticisms of de Vignemont and Jacob's proposal.

Gallagher provides several criticisms of de Vignemont and Jacob's conditions. For example, he asks us to consider the affectivity condition, the notion that for an experience to be empathic both empathizer and target must both undergo an affective state. Pointing to the quite trivial fact that we are always in some affective state, Gallagher says it's not clear that in all cases both the source and empathiser are required to be in affective states in any strong sense, nor could one claim that identifying with another's non-affective state of making a difficult decision is not some type of empathy—even if, he adds, it was something like a difficult mathematical decision (2012, p. 347). Moreover, it also seems reasonable to think that empathy incorporates more than an imaginative comprehension of another's emotional state (Gallagher, 2012). Thus, he remarks,

> Whether or not the other person is in some (relevant and non-trivial) affective state, one might think that the empathizer is necessarily in the affective state of empathy itself. Isn't empathy, regardless of whatever other affective state it may involve, itself an affective state? That is, one can understand empathy not as necessarily taking up a secondary affective state—e.g., a sadness or outrage I feel along with the other—but as being its own irreducible affective state—the state of feeling empathy (Gallagher, 2016, p. 127).

When one feels empathy (as itself a particular type of affective state) for someone who is having intellectual trouble solving a maths problem, he claims, the affectivity condition is not satisfied. What is more, if empathy is an affect in itself, then the isomorphic or inter-personal similarity condition also fails to be fulfilled, since the empathic affect in the empathiser is not the same as the affective states in the originator of said states.

Like the affectivity condition and inter-personal similarity condition, when scrutinised, the vicarious state condition is not without its problems—particularly when considered in light of emotional contagion. For de Vignemont and Jacob, empathy and emotional contagion are two very similar phenomenon sharing three out of the five conditions; that is, persons share an isomorphic affective state, and in both cases, there is an "as if" or a vicarious imaginative affective state which arises through the affected person's imaginative process. But why in the case of emotional contagion would we want to say persons merely undergo an 'as if' experience of an affective state?

Consider I and a group of friends are attending the second-leg of the World Cup qualification play-off final between Ireland and Denmark in Dublin. Our moods are currently good, as Ireland have managed to grind out a 0-0 draw in Copenhagen in the first-leg, giving the team a good chance of achieving qualification. I enter the national stadium and ascend the steps to the section where we will be seated. As I reach the top of the steps, I encounter fifty thousand Irish fans; the atmosphere is electric—a buzzing sea of green—suddenly I am overcome with a sense of elation and pride, I have quite literally caught the mood of the crowd. Are we to believe that the affective states I am experiencing are merely vicarious or 'as if', because I am not the originator of said states? Not from my perspective; these affective states feel no different to any other time I have undergone the experience of elation and/or pride. In short, it is hard to see how it is we can discriminate these as second-order affective states. Moreover, if it is the case that only the source is experiencing the first-order affective state and mine is

merely a copy of that state, how are we to know that mine is truly a second-order state? Could mine merely be an 'as if' affective state of someone else's 'as if' affective state, which also is a copy of a copy of a copy—*ad infinitum*. In short, it is not necessary to describe these affective states as vicarious or 'as if'—that is not to say that sometimes we do undergo 'as if' affective states—just that it is not always required. What is more, it does not seem likely that I need to imagine or simulate the mood of the crowd in order to generate the affective states of pride and elation.

Similar criticisms can be made if we consider the vicarious state condition in terms of empathy. As Gallagher remarks:

> [I]n many cases the empathizer's affective state (the empathy itself plus any other affective state that may accompany it) may in fact be a real rather than a pretend or vicarious state. My sadness and outrage about the injustice done to you may be a heartfelt sadness and outrage. It seems quite possible for me to forego simulation or the exercise of my e-imagination and to simply recognize the particular situation you are in and to feel genuine sadness and outrage at the injustice done to you (Gallagher, 2012, p. 367).

Gallagher (2012, 2016), along with Zahavi and Overgaard (2012), also point to an issue with the caring condition. They suggest, in phrasing the condition in terms of 'care', these thinkers seem to signify something closer to sympathy and at the same time seems to require that empathy always be a positive phenomenon. Thus, on this reading, we would have to rule out the example of the expert torturer empathising with her victim's pain in order to maximise the effects of torturing to break their will. Or if we think of it in terms of twins, we would also have to rule out the example of twins who can simultaneously be each other's best friend and worst enemy. In other words, it is well known that twins have a notable ability to enact a great deal of emotional pain upon one another (Kohl 2001; Davis 2014). To use a colloquial phrase, surely knowing how exactly—to press each other's buttons—is contingent on not just a recognition of an affective state, but also a rich grasp of that state? Hence, it would seem, that very often, empathy can manifest itself in ways that would not meet the conditions set out by de Vignemont and colleagues.

**Argument for Phenomenological Evidence**

We have seen that, when scrutinised, de Vignemont and Jacob's formulation of empathy runs into several problems, which indicates that it may not have been an error for the twins, whose accounts we referred, to characterise empathy as central to their

respective twinships. Recall Stueber (2006) and Jacob (2011) would not be impressed by my use of the phenomenological evidence to support arguments against simulation approaches. This is because, seemingly, phenomenology cannot be used as a guide to explain the underlining mechanisms that enable intersubjectivity in twinship. Spaulding espouses a similar view when she remarks:

> The debate in mindreading between the Theory Theory and the Simulation Theory is a debate about the architecture and sub-personal processes responsible for social cognition. Neither account is committed to any view on what phenomenology tells us is going on in our ordinary interactions' (Spaulding 2010, p. 131).

Therefore, for these simulation theorists the use of what Jacob (2011) calls the simple phenomenological argument is not warranted.

We have already discussed this argument at several points, and, that said, it will be useful to rearticulate it again for our current purposes. If simulation or theorising is an explicit or conscious routine and is our most primary or persuasive way of comprehending other's mental and affective states, then it would seem, according to Gallagher and Zahavi (2012), we should have some awareness of the different steps we go through when we explicitly imagine, simulate or theorise about those mental and affective states. That is not to say we do not sometimes engage in conscious inferential routines to understand others, yet, as shown—particularly in the case of twins—this does not seem to be supported by the experiential evidence (Gallagher, 2007b).

However, in response to the simple phenomenological argument, Jacob claims:

> [I]t betrays a misleading use of the implicit/explicit distinction. Arguably, the implicit/ explicit distinction applies to cognitive tasks (of e.g. mindreading), which can be achieved either explicitly (via the use of language) or implicitly (without using language) […] [M]ental simulation is the name of a cognitive heuristic or mechanism, whose steps, operations and computations are meant to be beyond the scope of conscious awareness (2011, p. 526).

However, not all those who endorse an observational or third person inferential account of mindreading would seem to agree with this view. For instance, when Goldman appeals to available introspective evidence as prima facie support of his version of simulation theory, it wouldn't make any sense if he were not denoting a process that is consciously available and accessible (Goldman 2006, p. 147). Similarly, we have seen in Jacobs' collaborator, Vignemont's, earlier paper that mindreading or simulation can

be "more or less conscious" (2009, p. 645; see also, Jeannerod and Pacherie 2004, p. 1289). Even Stueber seems to admit this when he says:

> [I]t is only by using our cognitive and *deliberative* capacities in order to reenact or imitate in our own mind the thought processes of the other person—are we able to conceive of another person's more complex social behaviour as the behaviour of a rational agent who acts for a reason (2006, pg. 21, my italics).

Hence, it would seem at least some simulation theorists are claiming that consciously available processes do have a part to play in our simulation of other minds, and as Zahavi (2014a) points out, the same can be said for theory theorists in their discussions of how we apparently infer the mental states of the other. For him, it seems natural to understand the theory-formation account in this way; for instance, he asks us to consider Gopnik's account, which claims that the same cognitive processes are necessary for both scientific progress and the child's development of a theory of mind, "and that there is a striking similarity between the acquisition of scientific knowledge and the child's ability to interpret behaviour in terms of an agent's mental state" (Gopnik 1996, p.169, cited in Zahavi, 2014a, p.171).

Yet, there is a more central problem with Spaulding and Stueber's accounts. Sub-personal mechanisms examined by theory theory and simulation theory are mechanisms supposed to explain something. Zahavi asks:

> What is the explanandum? Ultimately, the full diversity of personal-level social cognition and interaction. If we mischaracterize the explanandum, if we don't possess careful descriptions of its different facets—which is arguably one of the things that phenomenology can offer—it will be rather difficult to locate and identify the relevant sub-personal mechanisms (Ibid., pp. 171-172).

I conceded earlier that perhaps the phenomenological evidence shouldn't necessarily be used as a guide to explain the underlying mechanisms that allow twins to engage in exceptional mutual understanding. Yet, as Krueger notes:

> [I]t seems odd to suggest that the phenomenology of certain cognitive processes has no relevance whatsoever when it comes to understanding the nature of those same processes […] Social cognition theorists should not accept this sort of unquestioned reductionism. And phenomenologists likewise ought not to accept the implication that theirs is a purely descriptive project of taxonomy and classification devoid of causal-explanatory potency (2014, p.164).

Indeed, as Zahavi shows, defenders of simulation theory and theory theory endorse exactly the opposite claim to the likes of Spaulding and Stueber. In other words, there are those who claim that the phenomenological evidence is relevant to cognitive

science. What is more, they claim their accounts are more than capable of doing justice to the findings of phenomenological research (see, Currie 2011; Lavelle, 2012).

When I earlier conceded that perhaps simulation theorists such as Jacob, Stueber or Spaulding may have a point, I nonetheless maintained that, at the very least, the simulationist accounts must be able to adequately account for the phenomenological evidence, or put differently, they must satisfy the criteria I set out for an account of EMU in twins, as we have seen, their accounts have failed to do so.

Moreover, it should also be clear, while the phenomenological evidence is not infallible, it can also point to lines of enquiry that would be overlooked if we were merely to adopt the kind of reductionism advocated by the likes of Spaulding. As noted in the last chapter, it is likely that much of the anecdotal evidence is exaggerated or embellished by twins and persons who have observed them, precisely because they interpret such behaviour through the dominant Western socio-cultural narratives we have about twins. Nonetheless, such accounts must be pointing to something significant, or twins and observers of twins would have nothing on which to base these interpretations. As Kohl remarks, "I have interviewed more than fifty sets of twins and all of them profess some ability to communicate with each other, either in a language of their own or without words at all" (2001, p. 49).[7]

Therefore, we can at this stage conclude that the simulationist approaches we have explored are inadequate because they cannot help us to outline the kind of exceptional intersubjective capacities we see arising in twin-twin social interaction. What is more, it would be premature to rule out empathy as an essential feature in twins' mutual understanding, as the accounts we have thus far explored seem mistaken.

Yet, it is also worth restating the hypothesis we formulated on the basis of de Vignemont's (2009) claims regarding mirror empathy, as this pointed towards a thesis worth exploring. That is, the idea that twins have an exceptional ability to comprehend each other because their mutual understanding is contextualised both by what is happening in their immediate surroundings and by broader background knowledge. However, as we have seen de Vignemont does not provide the depth of material necessary to explore this thesis vis-à-vis simulation approaches, nor would her claims

[7] In my view, denying twins' accounts of EMU as credible would amount to a form of epistemic injustice (see, Fricker, 2007; Carel, 2016).

regarding the asynchronous nature of context and directness allow us to explain why experientially twins seem to have a direct grasp of each other's complex mental and emotional life.

Therefore, in what follows, we explore alternative approaches to empathy, namely, those found in the phenomenological tradition. We will see that phenomenology provides rich and detailed discourses which will be useful for shedding light on the exceptional intersubjective capacities we find in twin-twin social interaction.

**Phenomenological Approaches to Empathy**

In the previous section, I highlighted several criticisms of de Vignemont and Jacob's formulation of empathy; I pointed out that empathy occurs and manifests itself in many ways that would not satisfy this strict formulation. This indicates that perhaps the twins who describe empathy as central to their twinship are correct to do so. To (dis)confirm this we must explore accounts that are not underpinned by the assumption that simulation (in one form or another) is equivalent to empathy.

Fortunately, the varying, and often competing, phenomenological approaches to empathy are unified on this point, that is, they are fundamentally opposed to the notion that we primarily infer, imagine, theorise, or simulate others in order to primarily accomplish empathy. It is not a question of abstractly ascribing a certain mental or emotional state to another; rather, as Ratcliffe points out, generally speaking, the phenomenological approach maintains that empathy "is not about replicating someone's experience and somehow coming to appreciate it as hers. It instead involves a more direct appreciation of a person's experience as she experiences it" (2013a, p. 270). Similarly, Husserl remarks, "we intuitively ascribe to the other person his lived experiencing, and we do this completely without mediation and without consciousness of any impressional or imaginative picturing" (Husserl, 2006, p. 84). Husserl and Ratcliffe are certainly not alone in espousing such a view, numerous thinkers from the phenomenological tradition, including Stein (1989), Scheler (1954/2017), and Schutz (1967), and contemporary thinkers, like Krueger (2012; 2013a), Jardine (2014, 2015) and Zahavi (2007b; 2010b; 2014a) make similar claims.

Broadly construed, this approach has two principal features. The first of these, concerns what phenomenologists take empathy to be, namely, a particular type of intentional state (i.e. remembering, believing, wanting, wishing). In this case, an experience of

one's own that presents another experience as someone else's (Ratcliffe, 2013a, p.270). Or as Krueger describes it, "a primitive, irreducible form of intentionality that, prior to inference or simulation, presents other human beings to me as 'minded' in my experience of them (2013a, p.247). In other words, because empathy is a unique type of intentionality it is not reducible to other forms of intentionality, such as postulating or simulating. We have seen that simulation theorists hold that in order to empathise with person A, we must simulate or imagine a vicarious experience of their affective state and then ascribe that state to them. By contrast, because thinkers from the phenomenological tradition maintain that empathy is an irreducible form of intentionality that has person A's affective state as its content, then an intermediate step involving a first-person simulation of A's affective state is not required, because it is already given in experience. In short, I can directly or non-inferentially experience the other's mental and emotional life.

In opposition, theory theorists and simulation theorists have denied that it is possible to directly experience the minds of others; this is the motivating factor behind their need to account for mental states in terms of postulating theoretical inferences and/or implicitly/explicitly running simulations. By implication, both approaches are underpinned by the assumption that the minds of others are entirely hidden behind observable bodily behaviour. Thus, one of the principal challenges, "facing any theory of empathy [or social cognition] is to discern how and why we start attributing such hidden mental or affective states to entities" (Gallagher and Zahavi, 2012 p. 205). Put another way, both these approaches to social cognition are united in the claim that we take a third-person *observational* stance when postulating or simulating the mental and emotional states of others, because these states are hidden behind *observable* bodily behaviour.

Phenomenologists by contrast, claim that empathy involves a more fundamental type of second-person access to the experiential life of others, and this is qualitatively distinct from one's first-person access rather than just a deficient variety of it. Zahavi elucidates:

> Husserl repeatedly stresses, the fact that my experiential acquaintance with the mind of the other differs from my first-person acquaintance with my own mind (and from the other's experiential acquaintance with his or her own mind) is not an imperfection or shortcoming. On the contrary, it is a difference that is constitutional. It is precisely because of this difference, precisely because of this

> asymmetry, that we can claim that the minds we experience are other minds (2014a, p.130).

Indeed, in chapter 2, we saw that it is this rudimentary phenomenological difference that allowed us to clearly demarcate the self-other distinction in twinship. That is, because twin A cannot experience twin B as she experiences herself, there is a dimension of inaccessibility to B's consciousness and this is precisely why B is an other, because she is a self with her own irreducible first-person perspective. It should also be clear then, that this dimension of inaccessibility is what also allows A to recognise B as 'minded' (and vice versa). Zahavi explains, even though I don't have access to the first-person perspective of the other's experience, even though I do not experience it as it is experienced by the other, "the fact that there is more to the other's experience than what I am grasping is salient to me, as Husserl repeatedly emphasises" (Ibid., p. 131). To claim, as some proponents of simulation accounts do, that I can only have a true experience of the other if I experience their mental life in the same way as they do is nonsense because it fails to capture what is different and unique about the 'givenness' (i.e. the embodied aspect of their experiential life that is *given* to me in experience) of the other (Zahavi, 2001; 2007b). In other words, I don't need to take a third-person observational stance, to postulate or simulate the other's mental or emotional state as I already have a more fundamental second-person or direct access to their experiential life.

This relates closely to another principle feature of phenomenological approaches to empathy. Namely, as I do not have to postulate or simulate hidden mental states, I therefore have a direct or non-inferential access to the other's mental life, which means that empathy (at least at a basic level) is perceptual, or perception-like; it is a "kind of act of perceiving" (Stein, 1989, p.11). Put differently, because empathy allows me to directly experience the other's experiential life, it is analogous to perception rather than a type of mentalising. Therefore, when I perceive others, I do so in a different way than I perceive objects. I perceive them as the bearer of thoughts, feelings, and intentions, as a "psychophysical expressive unity" (Scheler 1954, cited in, Krueger, 2013a, p. 247).In other words, I perceive others as minded, and the aspect of their mind that is given to me in experience is that which is expressed via their body. Hence, "the actions, gestures, and facial expressions of others present me with the experience of a concretely embodied mind" (Ibid.).

Contrary to theory theory and simulation theory, then, phenomenologists hold, that the relationship between body and mind is not taken as a causal link between two separate entities, but rather is an expressive relation (Szanto and Jardine, 2017, p. 90). If we were to follow the logic of simulation theory, that is:

> [I]f we begin accepting that there is conceptual separation of the mental from the behavioural (i.e. overt bodily behaviour), and if my own self-experience is of a purely mental nature, whereas my experience of others is purely behavioural in nature, we need to understand why I should even so much as think that there are other minded creatures (Gallagher and Zahavi, 2012, p. 205).

Wittgenstein, a philosopher not usually associated with the phenomenological tradition, seems to take a similar position. He claims that if the mind did comprise an inviolably private realm whose contents were accessible only to the person whose mind it is, then it would be impossible for a person to acquire mental groundings. Put differently, Wittgenstein is claiming that from a *purely* private first-person perspective, talk about the mind, and even one's own mind is not possible. Consider the following passages where he seems to distance himself from the conceptual separation of mind and body:

> In general, I do not surmise fear in him – I see it. I do not feel that I am deducing the probable existence of something inside from something outside; rather it is as if the human face were in a way translucent and that I were seeing it not in reflected light but rather in its own (1980b, § 170).

> "We see emotion."– As opposed to what? – We do not see facial contortions and make the inference that he is feeling joy, grief, boredom. We describe a face immediately as sad, radiant, bored, even when we are unable to give any other description of the features. – Grief, one would like to say, is personified in the face (Ibid., § 570).

> Consciousness in the face of another. Look into someone else's face and see the consciousness in it, and also a particular shade of consciousness. You see on it, in it, joy, indifference, interest, excitement, dullness etc. The light in the face of another. Do you look within yourself, in order to recognize the fury in his face? It is there as clearly as in your own breast. (And what does one want to say? That someone else's face stimulates me to imitate it, and so that I feel small movements and muscular tensions on my own part, and mean the sum of these? Nonsense! Nonsense, —for you are making suppositions instead of just describing. If your head is haunted by explanations here, you will neglect to bear in mind the facts which are most important (1980a, § 927).

Similarly, for phenomenological thinkers; Stein would claim particular expressions of emotion "are not contingent and separable effects of hidden, inner causes but culminations of experiences without which those experiences would be incomplete.

Experience is thus inextricable from its expression (1989, cited in, Ratcliffe, 2013, p. 270).

As must be obvious by now, phenomenological approaches to empathy thus reject the view that minds are completely concealed away in one's head, hidden from the view of others. On this view, in experiencing the other's expressive behaviour—to some degree—I see their mental and emotional life play out in behaviour. In terms of an epistemology of other minds, Krueger highlights that for the phenomenologists, "perception of others in their concrete expressiveness is thus sufficient to justify our belief that others are likewise minded" (2013a, p. 247).

As we saw in the last chapter, neo-Cartesian approaches such as simulation theory are underpinned by an asymmetry that holds that we have a direct non-inferential access to our own minds and an indirect inferential third-personal access to others' minds through their publicly observable behaviour. Zahavi, drawing on Scheler, explains, "the standard neo-Cartesian asymmetry jointly underestimates the difficulties involved in self-experience and overestimates the difficulties involved in the experience of others" (Zahavi, 2008, p. 518).

As demonstrated in the last chapter, when scrutinised, the notion that underpins theory theory accounts, that is, that there is a parallelism between self-knowledge and other-knowledge seemed to run into problems both on an empirical and theoretical level. Hence, it was necessary to turn to an account which acknowledged an asymmetry between self-knowledge and other-knowledge. Although simulation theory does endorse an asymmetry of this kind, at least in some accounts, it would not respect the self-other distinction in a fashion that is crucial to understanding intersubjectivity in twins. This is because the replication of another's mental state does not amount to an understanding of it, but merely imposes another's first person perspective on the other (Ratcliffe, 2013a, pp. 269-270). In other words, simulation theory overemphasises this asymmetry because it assumes that the mental states of others are completely hidden away. Thus, for the purposes of our study, this approach does not appreciate the necessary difference between each twin, as by overemphasising the self-other distinction it merely reduces other-knowledge to self-knowledge. Hence, were a twin to experience, their co-twin in the same way that they experience themselves, "it would

lead to an abolition of the difference between self and other, to a negation of the alterity of the other, of that which makes the other an-other" (Zahavi, 2001, p. 153).

By comparison, phenomenological approaches do not endorse the view that we have infallible access to our own minds, nor does it take the opposing view, that we can only access our mind indirectly via a theory of mind. Rather, it takes the moderate position that while we do have a direct access to our minds, this access can be fallible. Likewise, while to some degree we can access the mind of the other, that doesn't mean we can experience the other as they experience themselves. As Scheler remarks:

> The realisation that as finite beings we can never see right into one another's heart, that we cannot even have full and adequate knowledge of our own hearts, let alone other peoples', is given as an essential feature in all experiences of [empathy] (Scheler, 2017, p. 66).

He therefore maintains that we must pay close attention to what is actually given in our experience, rather than letting some conceptual abstraction of body and mind decide what can and cannot be given. Zahavi similarly remarks, "we should not ignore what can be directly perceived about others, and we should not fail to acknowledge the embodied and embedded nature of our own self-experience" (Zahavi, 2014a, p.122).

We have seen, that phenomenologists oppose the conceptual separation of body and mind, and therefore disregard the idea that empathy is a two-step process which first consists of a third-person access to observable overt bodily behaviour and then second, a first-person simulation which we ascribe as a mental or emotional state to that behaviour. Instead, we already have a more fundamental second-person access which allows us to directly experience the embodied aspect of the others' mental and emotional life.

Phenomenologists would also oppose the notion that we would need to infer or simulate the contexts in which mental phenomena arise, and this is because as embodied minds we are always embedded in complex contextualised social settings, not abstracted from them. As Krueger notes:

> We directly see mental phenomena in ongoing patterns of expressive behavior and respond accordingly. This behavior, as well as an appreciation of the different situations that contextualize it, provides sufficiently rich information to discern others' thoughts, emotions and intentions (2013a, p. 248).

Earlier, I explained that de Vignemont and colleagues endorse the asynchronous nature of directness and contextuality. In other words, if context is not something that can be given directly, then one must simulate the normatively relevant features to allow for a rich understanding of the other's emotional state. Indeed, Stueber who outlines a two-route approach to empathy would similarly claim that because low-level or basic empathy is regarded as being knowledge poor, then we must rely on reenactive or high-level empathy to achieve a rich understanding of the other's emotional state. On the other hand, Szanto and Moran note:

> Stein's view that, in directly perceiving other's mental states in empathy, one not only grasps isolated, 'mental slices' […] but rather always and already grasps certain motivational and rational relations holding between their mental and emotional states, cuts across Stueber's distinction. Thus, for instance, I not only see that the child is angry, but, at the same time, that she is angry because she doesn't get what she wanted. I do not merely apprehend a proposition or a content but grasp a person's mental state or emotional and their motivation and rationale in their context (2015, p. 451)

On this view, it isn't necessary for the likes of Stuber and Goldman to posit a distinction between high-level and low-level empathising/mindreading/simulation because we already experience an embodied mind, embedded in contextualised social settings, which gives us a direct access to the aspects of their mental and emotional life that is embodied and embedded. Therefore, contrary to simulation theorists, phenomenologists would instead defend the claim that contextuality and directness are synchronous rather than asynchronous.

It should be evident at this point that phenomenological approaches to empathy are underpinned by fundamentally different assumptions or presuppositions to those that form the basis for simulation theory and theory theory approaches. Thus, they not only provide us with rich resources, they also provide us with different presuppositions on which to base an account of exceptional mutual understanding in twins. However, as we will now see, while more promising than simulation theory and theory theory, phenomenological approaches also seem to have some limits when it comes to describing EMU in twins.

**Conclusion: Empathy in Twins**

Throughout this chapter, we have seen that simulation approaches to empathy ultimately fail because they are underpinned by unwarranted assumptions regarding both the nature of the mind and the kind of access we have to the mental life of others.

Thus, we can conclude that not only are de Vignemont and colleagues wrong about their formulation of empathy, but also it seems they, along with other simulationists, are misguided to claim that empathy can be equated to a simulation process.

The question remains, are twins, who claim that empathy is central to their twinship, correct to do so? Put another way, is empathy central to the intersubjective phenomena that I have characterised as exceptional mutual understanding in twins? I think many phenomenological thinkers like Zahavi, and Husserl would answer this in the affirmative.

However, while I think they would agree that empathy is central to twinship, they would not claim that it alone can account for the kind of exceptional intersubjective phenomena we see arising in twinship. I think Zahavi explicitly would say that empathy is not synonymous with the range of exceptional intersubjective capacities we find in twin-twin interaction but perhaps presupposes it. For example, he notes:

> Importantly, however, when saying that empathy can provide a special kind of understanding, this is not meant to suggest that empathy provides an especially profound or deep kind of understanding [...] No, the specificity of the access is due to the fact that it is *basic* and *intuitive*; that is, the empathized experience is given directly as existing *here and now* (Zahavi, 2014a, p. 151, my italics).

By implication then, empathy, as understood by at least some of the phenomenologists, does not meet all of the criteria I have set out for understanding EMU in twins.

To rearticulate, clearly it can meet criterion (iii), as it not only respects the self-other distinction but also conceptualises it in a way that is conducive to outlining intersubjectivity in twins. Moreover, it also satisfies (i), because it allows us to understand that the aspects of the co-twins' emotional and mental lives are directly given via expressive bodily phenomena and that these are embedded in contextualised social settings. However, it does not fully satisfy (ii). While Zahavi claims empathy is (b) direct or non-inferential, and even though for him it is intuitive, this understanding is only basic, in other words, it does not explain how a twin can grasp the *complex* mental and emotional life of their co-twin, (a) rapidly or intuitively.

That seems to be contrary to first person accounts of twins who claim that a grimace can communicate a whole complex thought to each other (Sipes and Sipes, 1999). As Kohl notes, "[twins] seem to be acutely in tune with each other's mind and body. They are

perceptive, receptive and very sensitive to the feelings of their co-twin" (2001, p. 55). These claims are not just anecdotal, Piontelli remarks: "Twins often seemed to 'know' better than anyone else the moods, rhythms and needs of the other [co-twin]. Often all they needed was a glance" (2002, p. 119). Moreover, previously we saw that Crystal (1987;1989) remarks on the intuitive and rapid way in which twins are able to predict what the other is likely to say. Likewise, Zazzo (1976) observed that twins have an exceptional ability to read each other's facial expressions and gestures, which meant they had less of a need to communicate verbally.

My concern then, is that the phenomenological approach to empathy does not go far enough, while I agree that empathy would seem to be an irreducible type of other-directed intentionality that gives us a direct acquaintance with other minded beings, it would seem in the case of twins that the degree of 'givenness' is more profound and complex. Hence, I am fairly certain that even the varying accounts of empathy we see in the phenomenological tradition cannot do justice to this point.

We have seen one of the principal features of empathy in the phenomenological tradition is that, at a basic level, it is perception-like or analogous to perception. It is on this basis that many phenomenologists claim that we have a direct intuitive access to the embodied mind of the other. However, while they would claim that this access is basic, I on the other hand think that, in the case of twins, this access at least to some degree is more sophisticated. It will take more than a few cursory sentences to adequately deal with this point. Hence, this will become the focus of the next chapter, in other words, we will explore the perception-like nature of empathy. This will allow for a better understanding of why thinkers like Zahavi make the claim that while intuitive, perception-like empathy can only allow for a basic understanding of the other.

To give the reader a better idea of how the rest of this thesis unfolds it would at this point seem wise to outline the final three chapters of the project.

In chapter 5, I will essentially argue that the concept that underpins perception-like empathy, namely, 'passive synthesis' is too narrow; and, as a result, accounts of empathy provided by thinkers like Zahavi and Husserl cannot fully explain the exceptional intersubjective capacities we find in twin-twin social interaction. Instead, I will propose that a more robust passive synthesis manifests in the interpersonal relations of twins.

However, more will be required if we are to demonstrate that this is the case, therefore, in chapter 6, I carry out a study of the ontogenesis of the exceptional intersubjective capacities that arise in twin-twin social interaction. To do this, I turn to Merleau-Ponty, who offers rich resources for understanding the nature of passive synthesis, or what he more generally refers to as operative intentionality.

Operative intentionality or pre-reflective consciousness is the *modus operandi* of the body schema; therefore, we will need to trace the body schematic development of twins. Jane Lymer, in her work, shows that from 22 weeks gestation a singleton foetus already has a functioning body schema, which allows for them to become body schematically coupled with their gestational mother. From this, Lymer argues that an affective bond is formed, which primes the prenate for intersubjective relations with adults and older children post-partum.

Drawing on her account and empirical evidence I will show that twin foetuses, from as early as 14 weeks gestation, have a functioning body schema, which allows for an accouplement of body schemas with both the mother and the co-twin. Thus, twins are born both affectively bonded to the mother and the co-twin. This means (particularly monozygotic) twins are primed for post-partum relations with both adults/older children and their co-twin. Thus, we will see that body schematic development occurs differently in twins, therefore indicating that I may be correct to claim that a robust passive synthesis manifests in twin-twin social interaction.

In chapter 7, we will continue our study of the ontogenesis of intersubjectivity in twins by exploring their post-partum development. To do this, I draw on developmental evidence and phenomenologically inspired interactionist approaches to social cognition.

However, interactionist approaches are also limited and thus will need modification if we are to account for EMU in twins. Once this has been done, I will contend that a novel operative intentionality or robust passive synthesis manifests as a result of a reciprocal influencing, or coupling, of each other's body schemas that originates between twins (in particular monozygotic twins) in gestation and continues to develop and form the basis of their interactions throughout their respective lives.

In terms of interactionist accounts, we will see that twins have highly developed and novel primary and secondary intersubjective capacities. In young twins, this allows for them to engage in pre-verbal cooperative interactions that are far more advanced than

the interactive abilities of young same age singletons. In mature twins these novel intersubjective capacities mean that they can exploit the nuanced and implicit narratives they have helped each other to shape to rapidly or *intuitively* grasp one another's complex mental and emotional lives in the *here and now*.

# Chapter 5: Expanding Passive Synthesis for Perception-like Empathy in Twins

## Introduction

The aim of this chapter is to explore the perception-like nature of empathy as defended by phenomenological thinkers, particularly Zahavi, to understand why it is limited to a comprehension of the other that is intuitive and basic. The motivation for doing so, as we have seen, is that twins seem to have a perception-like grasp of each other's mental and emotional life that is intuitive and, at least to some degree, sophisticated rather than basic. In short, my claim is that the direct-perception model as defended by Zahavi is too narrow for outlining the criteria for understanding exceptional mutual understanding (EMU) in twins (EMU criteria).

I turn to Monika Dullstein who also contends that Zahavi's direct-perception model is too narrow. However, as we shall see, she determines this for very different reasons. More precisely, she thinks we need to appeal to two views that we find in de Vignemont and Jacob's accounts, if we are to have an adequate account of empathy, namely, the isomorphism condition and the imagination-like nature of empathy. To do this, she turns to Stein's account, and from this, she contends that this phenomenological account can accommodate the perception-like nature of empathy, the isomorphism condition and the imagination-like nature of empathy.

However, her account is not without its shortcomings. More precisely, it seems to overemphasise the imagination-like aspect of empathy while underemphasising the perception-like aspect of empathy. Consequently, it becomes hard to see what solutions her account actually offers. In other words, her account seems to put forward many of the same arguments presented by others working in simulation theory. Put another way, Dullstein endorses a crude simulationist account of empathy which seems to misappropriate the kind of empathy put forward by Stein.

Hence rather than appealing to the intuitions of simulation theorists to expand Zahavi's perception-like account of empathy. I contend that we must examine the structures that underpin perception-like empathy if we are to reconcile his account with the EMU criteria.

To do this, I turn to Federico Bongiorno. While his work differs because his focus is on thing-perception and delusions, whereas mine is concerned with perception-like empathy and twins, we nonetheless have a very similar idea in mind, that is, if we work with the idea that passive synthesis must be understood in a strong rather than a weak sense, we will be able to much better understand both phenomena. More precisely, if we recognise, at least in some cases, that a relatively complex understanding of the other's experiential life can be achieved passively and associatively, then we will be able to describe empathy in the case of twins.

I conclude that Zahavi's account of perception-like empathy underpinned by a narrow passive synthesis fails to do justice to accounts of twinship. Instead, I contend that perception-like empathy in twinship is underpinned by a robust passive synthesis that enables each twin to have an exceptional ability to understand their co-twin through expressive phenomena which becomes unambiguous in the context of a shared world.

However, more will need to be done to defend the hypothesis put forward in this chapter. Hence over the remaining two chapters I undertake a study of the ontogenesis of the intersubjective capacities we find in twins to demonstrate that a robust passive synthesis manifests in their social interactions.

**Empathy as Apperception (Presentification)**

To appreciate why empathy as outlined by thinkers like Zahavi is limited to an intuitive understanding of others that is basic, we must explore one of the principal features of phenomenological approaches to empathy in more detail, namely, the perceptual, perception-like or quasi-perceptual aspect of empathy. Zahavi, of course, is a prominent phenomenologist, in his own right, but he is also a prominent Husserlian scholar, and it seems it is on Husserl's work that he bases some of his claims regarding perception-like empathy. Hence, it would be wise to turn to Husserl to explicate the nature of perception-like empathy.

According to Husserl, empathy on some level shares structural similarities with our perception of objects or 'thing-perception'. More precisely, Husserl describes empathy as a kind of apperception, 'calling to mind' or 'presentification' (vergegenwärtigung), which is not a perception that gives the object directly *in propria persona*, but rather a certain kind of quasi-perceptual awareness interwoven with, and founded on, these perceptions. According to Moran:

> In his *Passive Synthesis* lectures, Husserl defines it as 'a consciousness of having something that is not present in the original.' He also speaks of 'co-presentation' *(Kompriisentation)* or 'co-perception' *(Mitwahrnehmung).* Husserl employs the term 'presentiation' [presentification] *(Vergegenwiirtigung)* to cover a huge range of experiences including memories, fantasies, anticipations, awareness of the hidden side of a physical object, and so on: 'There are different levels of apperception corresponding to different layers of objective sense' (Husserl, 1982a, p. 111, cited in, Moran, 2004, p. 292).

For Husserl, the basic contrast here lies between what one experiences as their own in their own immediate sphere and what one 'co-experiences' as other in some sense. Thus, according to Moran, in *Ideas I,* Husserl (1982b) already discriminates between, what is experienced in an originary fashion, "namely, external transcendent things in immediate perception, experience of our own states of consciousness, versus non-originary experiences such as the object given in memory or expectation" (Ibid., p.293). Husserl claims that we do not have an 'originary' experience of others in empathy, or as noted previously, we cannot experience the other in the same manner as they experience themselves. For him then, empathy can be understood as an 'intuitive, presentive act,' but not one which presents the others experience as 'originär', or 'primordial' but rather as 'non-primordial'.

Whereas in regular perception of objects (thing-perception), there is a process whereby the whole thing is given to me as a series of profiles, and at any one time, I have a concrete perception of one-side of the object and a "co-presentation in an empty way or an 'appresentation' of the absent other sides" (Ibid.). While empathy is very similar to this kind of experience of something, as we will soon see, it differs in important ways. Moran further clarifies the nature of perception:

> Husserl distinguishes in a perception between the actual moments that are originally given or present themselves in a *Darstellung* in what he calls 'primary originarity' [primal presence], and what he calls the 'secondary originarity' [appresence] of the emptily co-presented other sides of the object that do not actually appear (Ibid.).

Obviously, in our perception of something, we see it as a whole and not just profiles of it, although this profile can be made the focus of another perception.

For example, when I see a container, I do not see the interior of the container, nonetheless, for external objects there is the chance to fulfil this empty intention by a

new perception (i.e. by opening the container to see what is inside). If we can see one side of an object, in principle, we can see the other sides too. The profiles which are sensuously absent but nonetheless co-intended as features of the object present, do not only permit the transcendence of the thing perceived, but also play an indispensable part in shaping what the thing perceived is experienced as: "from the very beginning, what this experience presents must belong to the unity of the very object appresented" (Husserl 1982a, p. 122). Therefore, "appresentation of this sort [perceiving a physical object such as a container] involves the possibility of verification by a corresponding fulfilling presentation (the back becomes the front)" (Ibid., p. 109). In short, a projective presentification can be explicated by a further genuine perception (Moran, 2004, p. 294).

However, as Jardine notes, Husserl indicates that the experience of another person simultaneously comprises a two-fold appresence:

> Given in appresence here are both aspects of what is physical (namely the absent "sides" of the other's body) and nonphysical aspects (namely the other's lived experiences). It is only through being co-intended with both such sorts of appresented aspects that the aspect of the other which is sensuously given, appears as aspect of the other. Noteworthy here is that while the other's appresented physical aspects may come to primal or sensuous presence through a movement on behalf of either the empathizing or the empathized subject, the experiential life of the other necessarily remains in appresence (2014, p. 297).

In Husserl's view, the experiences of another person may only be empathically experienced in such a way that they stay—in some sense—continually absent: "as this is what grounds the other's phenomenological character as co-existing, as a subject with his or her own lived experiences" (Ibid.).

In short, crucially for Husserl, empathy differs as the apperceived mental life of the other person cannot be clarified by physically moving to a new position. Moran claims: "This clearly marks off empathy from thing-perception. The other's inner experience is never given in the mode of its being perceivable" (2004, p. 294). Put differently, empathy is a type of second-person access to the experiences of others, which is qualitatively distinct from the first-personal way in which one experiences these experiences themselves. And as we have already seen, this difference is not a deficiency, rather, it is constitutional, as it allows us to experience the other as 'minded'. For Husserl then, it is vital that we understand "empathy as a presentification

that in principle cannot be verified in the manner in which I verify my own projective experiences or anticipations" (Ibid.). Otherwise—and as noted before—the other would no longer be the other, but rather would become part of the self (see, Zahavi, 2014a, pp. 129-131).

Zahavi, following Husserl, endorses a similar proposal, as he too is cautious about the way in which normal-perception or thing-perception is used as an analogy to empathy (see, Dullstein 2013, p. 341). However, it is precisely because of the use of the analogy between empathy and perception, or the view that empathy is perception-like that Zahavi's account has been dubbed the direct-perception model. With that said, on his account, empathy can only give us an intuitive access to what can be directly perceived about the other, namely, a concrete expression and not what is co-presented or apperceived, hence it can only be limited to a basic understanding of the other.

Yet, Zahavi's direct-perception account seems to run contrary to both twins' first-person accounts as well as academics who have observed EMU in twins. Put differently, in their experience of one another, twins often seem to be able to intuitively grasp each other in (at least somewhat of) a sophisticated rather than a basic manner. Hence, as we have seen, Zahavi's account cannot fully satisfy our EMU criteria. More precisely, it falls short in satisfying criterion (ii). While it allows for (b) a direct or non-inferential access to the other's experiential life, this intuitive access remains basic, in other words, it does not explain how a twin can grasp the *complex* mental and emotional life of their co-twin (a) rapidly or intuitively. Hence, I think it is fair to claim, that Zahavi's direct-perception model of empathy is too narrow to account for EMU in twins.

**The Direct-Perception Model is too Narrow**

Fortunately, I am not alone in this assessment. Contrary to what seems to be a misconception by many of those who engage Zahavi's account, Monika Dullstein clarifies that the direct-perception model—most closely associated with Zahavi and most "influenced by the work of both Scheler and Husserl" (Ibid., p. 340)—is far from the only account of empathy advanced by the phenomenological tradition (Ibid., p. 348). She remarks that Stein does not limit empathy to what Zahavi calls a basic understanding of another person. Rather, Stein "presents a three-step model of empathy which is meant to also yield a higher order form of understanding" (Ibid. p. 346). For Dullstein, "it is precisely this further reaching role of empathy which has been neglected

in today's phenomenological proposals" (Ibid.).[8] Therefore she aims to contend the somewhat misleading view that conceives of Zahavi's direct-perception model, "'as the' phenomenological account nowadays" (Ibid. p. 341).

Dullstein raises a similar concern to the one I have outlined above. That is, she contends that Zahavi's account is too narrow because it only emphasises that empathy allows for a basic perception-like grasp of the other's mental life. However, that is not to say that she disagrees with Zahavi's claims regarding the perception-like nature of empathy, but rather, she sees it as part of a broader conception of empathy that also includes views we have seen previously defended in de Vignemont and Jacob's (2012, 2017) accounts in the previous chapter. More precisely, she thinks that de Vignemont and Jacob are correct to defend both, the isomorphism (replication) condition and the role of imagination in empathising. Hence, she claims:

> Whereas Zahavi takes empathy to be fundamental to any kind of access to other people, de Vignemont and Jacob take empathy to be a very special form of understanding others. By restricting themselves to either one of these two roles, these authors ultimately talk about different phenomena when using the term 'empathy' (Dullstein, 2013, p. 334).

Consequently, to demonstrate that these varying views have a place in an account of empathy, and that Zahavi's account is not the only view of empathy to be defended in the phenomenological tradition, she engages Stein's work on the topic in depth. This is because "Stein's process model of empathy can be seen as a potential way of integrating the divergent intuitions from which Zahavi and de Vignemont and Jacob [start] off" (Ibid., p. 349).

**Empathy according to Dullstein**

According to Dullstein, the central method which Stein uses to develop her account is to compare empathy with other types of intentional acts, namely, memorising, expecting, and imagining. As touched upon, in contrast to thing-perception where the act and its content are experienced as 'originary' or 'primordially' given, the content of the above-mentioned acts is given in a 'non-primordial' or 'non-originary' manner. That is, Dullstein claims, "the content of these intentional acts are re-present[ed]

[8] This is also a concern for Husserl, who claims that a higher-level intentionality develops on this initial basis as a person attempts to understand why someone is feeling the way they are (see, Zahavi, 2014a, p. 138; 2014b, p. 136).

(vergegenwärtigen) or reproduce[ed] (reproduzieren) in one way or another" (2013, p.343). Note that Dullstein, in contrast to most of her contemporaries, translates 'vergegenwärtigen' as re-presentation rather than 'presentification'. This is an important point and one we shall return to shortly.

In Dullstein's account, Stein claims that empathy is similar because the content of the empathiser's experiences, namely, the experiences of the target, is given non-primordially. A further distinction concerning the temporal structure of these acts is then made. In both remembering and expecting, there is an obvious difference between the time when I remember or expect an event, in relation to when the event actually takes place. In contrast, we do not find a similar delay in cases of imagination or empathy. Whenever we imagine an object or empathise with someone, the phantasm or the empathised [experience] mental state is experienced as being present (Ibid., p. 344).[9] However, as Dullstein makes clear, imagination can be distinguished from empathy based on two further features:

> First, whereas an imagined mental state is experienced as unreal, as a mere possibility (e.g. 'if I was in situation XYZ, I would be angry.'), an empathized mental state is posited as existent. The other's mental state is not 'merely imagined, without real life', but is experienced as being real. Second, whereas imagining our own mental state involves our own self, empathy involves another subject. In short, then, empathy is for Stein an act which represents someone else's mental state non-primordially, but as now existing (Ibid.).

She goes onto highlight that for Stein, empathy proceeds in three steps. These are: "(1). The emergence of the mental state, (2). The fulfilling explication, (3). The comprehensive objectification of the explained mental state." (Ibid., p. 19). And she interprets these as: "(1). [We] [a]re vaguely aware of someone else's mental state, (2). [We] [f]ollow a tendency to be drawn into this state, (3). [We] [o]bjectify the mental state in an "apperceptive grip" (Ibid.).

However, I find this exposition of these steps to be rather vague and therefore, it may be useful to turn to an alternative account to get a better idea. For Michela Summa:

> The first [step] moment is that of the emergence of the experience. Here, we have a perceptual and still vague intuition concerning the other's experience. This is based on the passive synthesis of appresentation. The second [step] moment is that of the fulfilling explication, based on a shift in the empathizer's focus: as empathizers, we follow the tendencies to explicate what the other is experiencing, and this brings us to turn to the intentional object of the other's

[9] Note that Dullstein substitutes mental state for experience.

> experience. The third [step] moment is that of the recapitulating objectivation. Here, the object of my intention is again the other's experience. Yet, having been explicated through the presentification of the experience's intentional object, this moment of empathy yields a deeper comprehension (2018, p. 98).

Focusing on step two of this process, Dullstein claims that this step is in fact compatible with the isomorphism-condition. As she claims, if we follow our inclination to fully explicate or understand someone else's mental state (experience), it is, Stein claims, no longer given as an object to us. We are—as she states metaphorically—guided by the other person into her perspective onto the world and focus, as she does, on her intended object. We are drawn into the other's mental state, we "re-live it" (Dullstein, 2013, p. 344). Thus, in contrast to those phenomenologists who we have seen previously refute the necessity of the isomorphism condition (Gallagher, 2012,2016; Zahavi and Overgaard, 2012), Dullstein claims that Stein's work is at least one phenomenological account of empathy that does endorse the isomorphism condition, and which is compatible with de Vignemont and Jacob's views. Hence, she remarks, "the shifting focus which Stein describes in phase two fits with de Vignemont and Jacob's understanding of the isomorphism-condition as applied to the sharing of affective states" (2013, p. 346).

Besides the isomorphism-condition, Dullstein points to another feature of the second step that she thinks is worth highlighting. Specifically:

> In the second phase, the empathizer does not any more explore the target's mental state "from the outside" as the analogy to perception would suggest but joins into the target's take on the world […] Stein does not content herself with the analogy to perception and Husserl's ideas of appresentation precisely because she takes this enhanced or higher-order form of empathy into account (Ibid. pp. 345-346).

As we have seen, from the outset, Dullstein aims to differentiate Stein's account of empathy from the direct-perception model as proposed by Zahavi. That is, Dullstein essentially wants to argue that the direct-perception model should not be considered as a form of empathy. One way in which she tries to do this, is by playing down the importance of perception and by (subtly) asserting that, for Stein, the second step in the three-step model is perhaps the most important one, precisely because it is not analogous to perception. Translating a quote from the German critical edition of *Zum Problem der Einfühlung (On the Problem of Empathy)*, she quotes Stein as claiming: "Thus empathy as the comprehension of the mental state [experience] in itself does not

have the character of outer perception." (2008, p.17, cited in, Ibid., p. 342, translation by author).

In Dullstein's view, Stein is not only mindful and cautious of the drawbacks of the analogy between empathy and perception, but actually offers an alternate analogy to help clarify the phenomenon. Apparently for Stein, "empathy is better understood on the basis of an analogy to acts which present mental states as being non-primordially given" (Ibid., p. 346). More precisely, the act of imagining has many similarities to the act of empathising, as Dullstein notes, "both acts involve a moment in which we re-live an imagined or empathized mental state before we summarize the gained insights in an apperceptive grip" (Ibid.).

Thus, on Dullstein's reading of Stein, the second step can be understood as imagination-like; however, crucially what occurs in empathy differs to imagination in certain regards. As we have already seen, one obvious difference between empathy and imagination is that the experience been given is not that of the subject but that of the target of their empathising. But that is not the only one, as Dullstein points out:

> Empathy is, according to her descriptions, less active than imagination. Stein uses terms such as 'being drawn into' and 'being guided by' in order to make it clear that an empathized mental state is—in contrast to a phantasm—not experienced as something we come up with. It is not experienced as being the result of one's own considerations, but rather as something that is objectively given (Ibid.).

Dullstein points out, the empathiser can be wrong in the way they explicate someone else's 'mental state' [experience], however—and this is another point that distinguishes what occurs in the second step of empathy from imagination—this leads Stein to highlight the role of perception in the process. Dullstein clarifies that perceiving another in their way of expressing a mental life, whether it be in gestures or words, "not only forms the first step of the process of empathy, but it also helps to confirm, to modify and possibly correct the way the process develops" (Ibid., p. 347). Thus, on Dullstein's reading of Stein, perception is a necessary but not a sufficient condition for empathy.

Dullstein recognises that at least on some level perception has a role in empathy, but uses Stein's account to endorse the notion that one cannot achieve a sophisticated empathic comprehension without some degree of isomorphism, which happens by momentarily joining into the others experience [mental state] and "imaginatively" or

emphatically reliving said experience [mental state]. For her, then, empathy should not be articulated as providing an either-or situation between a basic or sophisticated understanding of another person's mental life.

As she says, if one distinguishes between the different facets of empathy, they will see that the analogy to perception can be enlightening for some of these but not for others:

> If the emphasis lies—as in de Vignemont and Jacob's account—on the second [step] phase, empathy seems to be fundamentally different from perception because the target's mental state is no longer given as an object to the empathizer. Rather, the empathizer comes to join in, to share the target's mental life. As there is a somewhat similar shift of focus in the act of imagining one's own mental state, there are better analogies to work with besides the perceptual one (Ibid., p. 349).

Yet, Dullstein notes, if one looks at the first step or phase, perception is clearly where empathy begins to emerge, particularly if one accepts—as Stein along with Zahavi does—that the empathiser's target must be bodily present. Dullstein notes, "a perceiver, as well as an empathizer tries to apprehend something that is there in the here and now. Both start off from what is primordially given, and both have to proceed to aspects of their intended objects which are appresented" (Ibid.). However, the decisive difference according to her concerns the way in which the apprehension is fulfilled or explicated. As touched upon, whereas in normal thing-perception one can look inside the container or walk around it to see the sides or back profiles, the empathiser must proceed to step or phase two in Stein's empathy process, in order to, "fully understand someone else's mental state [experience]" (Ibid.).

To sum up, Dullstein takes issue with Zahavi's model of empathy because it is too narrow. In order to (1) show that the direct-perception model of empathy is not sufficient to account for empathy, and that (2) it is not the only account of empathy defended in the phenomenological tradition, she turns to Stein's work on the topic. She mounts a two-pronged attack on the notion that empathy is analogous to perception, which does not completely dispel it, but rather dislodges the analogy as central to describing the phenomenon of empathy.

First, she claims de Vignemont and Jacob are correct to claim that an isomorphism condition is a necessary feature of empathy. More precisely, in contrast to Zahavi, who claims that the isomorphism condition is not necessary, because empathy provides an intuitive and basic understanding of another person, Dullstein claims that if one

examines the second step of Stein's account of empathy they will see that she in fact endorses a kind of isomorphism between the empathiser and the target. This sets Dullstein up for the second prong of her attack, because if an isomorphism is a necessary feature of empathy then surely an analogy to perception will not be able to account for how such an isomorphism occurs. She then aims to demonstrate the limits of this analogy, by claiming that, for Stein, it does not explain how we come to have a more complex understanding of the other's mental life. Dullstein claims Stein puts forward a better analogy for describing empathy, that is, the analogy between empathy and imagination. Or to rearticulate, empathy should be understood in its similarity to acts which present experiences as non-primordially given. In so doing, Dullstein apparently deals a blow to Zahavi's privileging of the perception-like structure of empathy, which on her reading of Stein, becomes a necessary but not a sufficient condition for empathy.

**Objections to Dullstein**

However, Dullstein's attack on Zahavi is not without its own shortcomings. We saw in the last chapter that the isomorphism condition for de Vignemont and Jacob (2012, 2017) is satisfied when both the empathiser and target share an affective state, that is, when they both first-personally experience fear or pain. As Jardine puts it, "at least in the most enhanced and ideal form of empathy, both the empathizing and the empathized subject must share a mental state" (2014, p. 282). In other words, the empathiser must have a representation of the mental state (or empathised experience), a representation which additionally is similar in its content and intentional object to the actual mental state or experience represented (Dullstein 2013, pp. 346–348). As mentioned above, Dullstein translates 'vergegenwärtigen' as re-presentation, yet as Jardine notes, this is perhaps something she does misleadingly, as she tries to align her account of Stein with de Vignemont and Jacob. However, she rightly recognises, Jardine adds, that Stein's account of empathic explication as a vergegenwärtigung does not bind her to the notion that the empathiser must imaginatively simulate the target's experience, "so as to experience it in a first-personal or primordial manner, a position which de Vignemont and Jacob defend in their own account" (2014, p. 283).

Nonetheless, however cautious Dullstein is (not only in equating her notion of isomorphism to that of de Vignemont and Jacob), Jardine is not convinced that Stein's

account of empathy, at least in a non-trivial sense—involves an isomorphism. As he says:

> But if [vergegenwärtigung is] correctly understood, it seems […] Stein's renders inappropriate any talk of empathy as involving isomorphism, and indeed 'representation' in Dullstein's sense. For if it is only the other's experience that is presentified [vergegenwärtigung], and not my own, then in successful cases of empathic explication the experience presentified is not merely similar to the other's actual experience, but it is that experience itself, given in the mode of empathy as opposed to that of self-awareness (Ibid.).

He notes if one presentifies an experience that one postulates as, to some degree, like the other's experience [mental state], we now no longer have a case of empathy. Rather, as he says, "such a case would involve an act of [actual] imagination whose content is presumed to correspond to the reality of the other's experience" (Ibid.). Furthermore, that would seem to return us to a criticism of simulation theory, as noted by Ratcliffe. Namely, a replication of an other's experience does not amount to an understanding of that experience but merely imposes our own first-person perspective on the other (2013, pp. 269-270).

Therefore, it would seem we are left with an account of empathy that fails to adequately describe what Stein took to be the phenomenon. What is more, this account would seem to be more like something we find in analytic philosophy of mind in the sense that it would be utilising 'representation' in its technical sense (or in the way Dullstein uses the above term).

More precisely, a mental representation in analytic philosophy of mind is a theoretical internal cognitive or affective symbol that signifies an external reality: in this case, an other's mental or emotional state. In contrast, the term *vergegenwärtigung* does not endorse the notion of an internal affective symbol that corresponds to some mental or emotional state. Rather, in the case of empathy, Stein maintains, the act which involves an original personally undergone experience 'announces' another actual experience as present, rather than a correspondence (Moran 2004, p. 276). The point is that there is no isomorphism because there are not two mental states that correspond to each other, but rather, there is one experience given in two different modes. As Zahavi notes:

> Stein rejects the proposal that empathy should make us undergo the emotion we perceive in the other. It doesn't literally involve the transmission of the other's experience into one's own mind. Rather, what is distinctive about empathy is

> precisely that the empathized experience is located in the other and not in oneself (2014a, p.126).

As we saw in the last chapter, we can directly experience the other's experiential life, because we have a second-person access to their experiential life. Put differently, person A's experience is given to them from the first-person perspective, thus, in a primordial manner; while for the empathiser, or person B, that experience is given through empathy, and thus is accessed from the second-person perspective, which means it is non-primordial.

Jardine is not the only Steinian scholar who claims that the isomorphism condition is not necessary for empathy. For instance, Fredrik Svenaeus—although keen to retain the affectivity condition—claims that Zahavi is correct "in pointing out that my empathic, perceptual understanding of the other person does not rely in every case on developing the same type of feeling as she is having" (2018, p. 164).

More issues arise for Dullstein's account when one examines her claim that Stein views perception as a necessary, though not a sufficient, condition for empathy. Consider the following from Stein herself:

> Consequently, we have in all considered cases when experiences are appearing to us three levels or modalities of accomplishment, even though in each concrete case not all of the three levels are accomplished, but we often settle with level one or two: 1. the emergence of the experience, 2. the fulfilling explication, and 3. the comprehensive objectification of the explicated experience. (Stein 2008: pp. 18–19, cited in, Ibid., p. 165)

Put differently, we have seen that the first phase is best explained by an analogy to perception. This, according to Stein, can occur without either phase two or three, and yet, can still be considered a case of empathy. Thus, perhaps perception, at least on one level, is a sufficient condition for empathy on Stein's account. With this is mind, it could be said she has more in common with Zahavi than Dullstein cares to admit. Moreover, while it is Dullstein's contention that Stein substitutes an analogy to perception with an analogy to an act that presents its content as non-primordially given because it allows for a better description of empathy, she also presents textual evidence that contradicts this view. That is, Dullstein cites passages from Stein where she clearly recognises the importance of the perception-like structure of empathy (2013, p. 343).

However, rather than take these seriously, Dullstein attempts to explain this away by claiming that Stein was merely taking Husserl's views into account. Yet, Jardine notes, if one scrutinises Stein's work they will see that she upholds that despite differing from thing-perception in its making present what may not be strictly psychically given (but only cogiven), "it is precisely the non-representational character and evidential import of empathy that makes it comparable to the outer perception of material objects" (2014, p. 283). Given this, it seems to Jardine that when Dullstein stipulates, in infrequently characterising empathy as a perception, Stein merely "tried to take her supervisor's views into account and to point to a possible way of combining her and Husserl's ideas" (Dullstein 2013, p. 343), "she underplays the structural similarities which Stein often stresses between thing-perception and empathy" (Ibid.). What is more, he notes, when Stein differentiates empathy from perception, she always "distinguishes it from the perception of material objects […] [E]mpathy may be regarded as perceptual-intuitive experience of the other person, understood as irreducible to the perception of material objects" (Ibid.).

It seems then, in trying to place a primary emphasis on phase two of Stein's account, Dullstein overplays the fulfilling explication of the other's experience, to the extent that she (subtly) posits a simulation process as the major component in empathy—we momentarily "relive" the other's "mental state"—by implication, she aligns her account closely to de Vignemont  and Jacob. Moreover, while she is correct to point out that Stein uses an analogy to other intentional acts that present their content as non-primordial (expectation, memory and imagination) to help describe empathy, she is also wrong to downplay the importance of the analogy between thing-perception and empathy. It seems to me that this move is more likely motivated by her contention that the direct-perception account does not amount to empathy, rather than a true echoing of Stein's views. As a contemporary of Stein and a fellow doctoral student of Husserl, Roman Ingarden notes, a number of phenomenologists such as Geiger, Scheler, Stein and Husserl contributed to the discussion that "the classical theory of empathy which considered it a kind of projection of one's own psychical states into foreign bodies had to be replaced by a theory that took empathy to be a special kind of perception of the psychical states as they are manifest in the bodily expression" (Ingarden, 1994, pp. 170-171, cited in, Zahavi and Overgaard, 2012, p. 4). Hence, one should not try to downplay the significance of the structural similarities between empathy and perception.

Furthermore, if one considers the examples of twin-twin interpersonal understanding noted throughout this project, it becomes difficult to conclude that empathy can be best described by downplaying its structural similarities to perception, and instead favouring an analogy to an act like imagination. Could we say that when Tara and her co-twin look around them and then look at each other, and automatically know what the other is thinking or feeling, that they are going through a three-step process, which includes a 'moment' where they 'relive' each other's mental and emotional life in order to richly grasp it? Should we put forward the same theory to explain how 'a glance' enables each twin to grasp the moods, rhythms and needs of the co-twin, as Piontelli observes? Is this the case, when twins are able to predict what the other is likely to say in an intuitive and rapid way, as Crystal remarks?

It seems too strong a claim to say that in every case twins do not engage in a three-step empathy process as outlined by Stein. Yet, it also seems plausible to suggest phase two of Stein's account is bypassed, which allows each twin to move directly from phase one to phase three. As Dullstein herself notes, Stein claims in the German critical edition, "the first and the third phase could be described as forms of perceiving someone else's mental state in Husserl's sense" (Dullstein, 2013, p. 345), and therefore:

> The complex act, […] which co-comprehends the expressed [experience] with the bodily expression must arguably be called outer perception. The primordially given expression 'appresents'—as Husserl likes to say—the mental state which exists in the here and now as 'something that is given along'." (Stein 2008, p. 15, cited in, Dullstein, 2013, p. 343).

Alternatively, one could claim that much of the time, there is no need to move through levels of fulfilment, because twins, already at the most fundamental level, sufficiently grasp each other's mental and emotional life in an intuitive and perception-like manner.

As noted above, Stein claims that phases two and three are not always required in empathy. However, in opposition to my stance, namely, that phase one can be considered empathy, Svenaeus thinks the most fair and enlightening interpretation of Stein's claim is that other thoughts and feelings one is having and/or aspects of the situation one finds themselves in, may voluntarily or involuntarily stop them from moving from phase one to phase two and three. He notes:

> In Stein's view, experiences of other persons' experiences which because of such blocks do not lead to any fulfilling explications may still count as empathy

> because the perception-like qualities at the first stage are already rich enough to give us at least a basic understanding of the experiences the other person is having (the Husserl-Zahavi version of empathy) (Svenaeus, 2018, p. 165).

However, he claims that if we want to retain the colloquial usage of the word, it may be beneficial to only call such cases of other-directed intentional acts empathy when these acts are in some way trying to explicate the experiences of other subjects in their own right. For him, it seems strange to call them instances of empathy if "instead of bringing myself to proceed with the experience of the other (step two), they are immediately followed by a turning away from the person in question, not taking any interest in her predicament" (Ibid.).

I disagree with this interpretation, as we can see that in the case of twins, it appears the perception-like qualities of phase one, in Stein's account, already contain the meaning required to provide not just a basic understanding, but also (at least somewhat of) a sophisticated grasp of their co-twin.

Instead consider an alternative interpretation. Perhaps Stein means that in cases where I already richly comprehend the other in their motivations, habitualities, and sedimentations, there is no need to move from phase one to phase two in order to further explicate their experience. More precisely, in the case of twins, perhaps empathetic understanding rests upon a shared context of normative relevance to which each person is attuned (Jardine, 2015). From this observation it appears that very often twinship is a case "in which one is directly aware of someone else as responding in emotion or action to a situation whose normatively relevant features are evident to both self and other" (Ibid. p. 581).

To conclude this section, it seems while Dullstein and I can agree that Zahavi's account of empathy is too narrow, we do so for vastly different reasons. While she tries to expand what can be grasped in empathy by appealing to the intuitions of simulation theorists like de Vignemont and Jacob, I am of the view that we need to re-examine what can be given at the perception-like level. Consequently, we can at least be certain that my account remains closer to the Husserl-Zahavi direct-perception model than Dullstein's analytic appropriation of Stein.

In what follows, we shall further explore the nature of perception-like empathy. We shall see that by expanding a process central to perception and empathy, namely, the

function of ‘passive synthesis’, we can begin to make sense of how twins can grasp each other’s mental lives in the ways we have examined previously.

**How much can be given in perception-like empathy?**

As we have seen, Husserl differentiates perception between the actual moments that are concretely given in ‘primary originarity’ (primal presence) and the ‘secondary originarity’ (apperception) of the empty co-presented other sides, or profiles, of the object that do not actually appear. In this case, the appresentation of perceiving an external object involves the possibility of verification by a corresponding fulfilling presentification. In other words, by changing my perception I can then fulfil my empty presentification, as once I can see one side of an object I can then, in principle, see the other sides (or inside) too. It is on this point that the structural differences between empathy and perception become apparent, as in Husserl’s view, I cannot fulfil the empty presentification by moving to a new position. Hence, for him, the other’s inner experience is never given as being perceivable. Thus, as Dahlstrom, Elpidorou, and Hopp note, “phenomenological approaches to empathy commonly describe it as a low-level phenomenon, a direct, albeit incomplete, experience of others” (2016, p. 5).

Put differently, I may see the *what* of the other’s experience (i.e. ‘anger, sadness, joy’) but I cannot know, without a movement to a higher-form of intentionality or empathy, the *why* of said experience (i.e. ‘why do they feel or think a certain way?’). Yet, this view, to me, seems somewhat misguided. Consider this: I have just made myself and my partner some popcorn and am making my way back to the sitting room. As I walk through the door, I can all at once see the joy expressed in both her beaming face and outstretched hands. I continue to walk through the door—which partially blocks my view of the room—and in the moment that follows, I see that her childhood friend is on the television playing the fiddle. Thus, I can *immediately* and *directly* see the *what* and *why* of my partner’s emotional life. Is this not an example of how I can fulfil an empty presentification by moving to a new position? One that does not involve me having to move to a higher-level of intentionality or empathy in order to understand *why* my partner is joyful?

Now, as we have seen, it is vital for Husserl that empathy is not understood as a presentification that can be verified in the same way I verify my own projective experiences or anticipations, as he fears this wouldn’t adequately respect the distinction

between self and other. Again, I think this fear is misguided; when I experience the joy my partner takes in watching her childhood friend playing Irish music on the television, this experience is still given as her experience, it still remains an empathic primordial act with non-primordial content. Or put another way, my access to my partner's experience still remains given as a second-person access rather than a first-person access. In other words, I appreciate it as her experience.

Still, one might object that I assume too much. How would I, for example, know the person on the television is my partner's childhood friend without perhaps having to leave the empathy process and ask who the person is? What is more, how can I properly appreciate her joy without some form of shift in perspective that allows me to experience her experience as hers? The simple answer is because I am intimately attuned to the person who is my partner. To expand on this statement, because I deeply understand her love of Irish music and the significance of her friend, who I have met on many occasions, I already possess the normatively relevant features which allow me not just to see the *what* and *why* of her experience, but also gain a profound grasping of said experience. What is more, the process can occur *passively* in me, that is, I do not need to *actively* infer, simulate, theorise, imagine, or have an imagination-like empathic experience to grasp the situation at hand. I plainly see that my partner is joyful because her dearest friend is playing Irish music on the television.

Conceivably, some may object that cases such as the one I discuss above are the exception rather than the rule, as Moran, in his exegesis of empathy in the phenomenological tradition stresses, *in principle*, I cannot verify the empty presentification of the other's experience in the same manner as I can an external transcendent object. Thus, he seems to suggest, there are at least some cases in which I can fulfil an empty presentification of the other's experience by moving to a new position. Likewise, in some cases, I will not be able to fulfil a presentification of an object with a further genuine perception (e.g. if the container is locked, or if the back and sides are obstructed).

Yet, when one considers the manner in which twins grasp each other's mental life, it seems evident that much of the time (though certainly not always,) their mutual comprehension is given in a perception-like intuitive manner that rather than being basic, contains at least some degree of sophistication. There aren't three steps spread

over a tripartite temporal structure like we find in Dullstein's and other's accounts (see, Summa, 2018; Svenaeus, 2016, 2018); rather, there is very often one moment, one glance, one movement, which enables twins to grasp each other's complex mental and emotional life. Now, I think if we are to account for this, without having to resort to claiming that twins have some kind of extra-sensory-perception or telepathy, we need to further assess the structure of perception and its role in constituting meaning.

Exploring the nature of perception is also a concern for Federico Bongiorno, who in an unpublished manuscript, aims to explore the role of passive synthesis in the constitution of delusional perception. As we will see, although his account differs for obvious reasons (he is concerned with thing-perception and delusions while I am concerned with perception-like empathy and twins), fundamentally we both have a similar task in mind, and therefore I will draw on his account to help cash out how I think perception-like intuitive empathy can enable a complex rather than a basic comprehension in the case of twins.

One principal claim Bongiorno makes is that those who have previously utilised the notion of passive synthesis are working with much too thin a concept, and thus have failed to provide a satisfactory account of how delusional perception occurs. To understand what he means by this we will now explore how he outlines perception.

Bongiorno points out, according to Husserl, every object in the outer world, inasmuch as it is given to consciousness, must be subjectively "constituted" (Husserl, 1982a, p. 78, cited in, Bongiorno, 2015, p. 9). Of course, he is not claiming, as Berkeley did, that external objects are ontologically dependent on the subject. Rather, as Bongiorno clarifies, Husserl is claiming that whatever way I make sense of an object, "no matter how accurate the employed methods and the procedures are, [the object] could only result from the mental operations through which we become aware of it" (Ibid.). Being aware of an object comprises two different levels of processing.

On one level, there are processes of which a subject is aware, whereby we actively invest things with meaning, processes such as inferring, theorising, simulating, imagining, etc. etc. Anything which results from these processes are, termed by Husserl, *active syntheses* (Husserl 2001, pp. 276-355, cited in, Ibid.). Bongiorno provides a well-known example:

> [W]hen I carefully attend to the books now lying on my desk, count them and judge ten books are arranged in a pile, whereas the remainder are open under the lamp, some of the elements in my perceptual field are synthetically combined into a meaningful compound, namely, a deliberate judgment (Ibid.).

However, in order for meaning-giving to be achieved at this level, *active synthesis* must be contingent on a more fundamental synthetic level where classes of sensory units and their mutual dependence come about beforehand as "self-evident" and "ready-made" (Husserl, 1973a, p.13). Put simply, for one to carry out a deliberate judgement or inference, they must already be given some kind of initial sense to judge upon. For example, "one prerequisite for predicating p of the object S is that the sensory features of the latter are experienced as belonging to one and the same object" (Bongiorno, 2015, p.9). In other words, I can infer that there is a pile of books on the desk as the pile is experienced as a unitary whole in which the books stand out as parts, but also because the pile appears as a definite figure against the background of the desk and the wall behind it. In order to emphasise how it is these synthetic achievements occur without any active engagement on the part of the subject, Husserl describes them in terms of *passive synthesis* (Husserl, 1973a, pp. 71-101).

Bongiorno outlines passive synthesis in a weak and a strong sense. In a weak sense, passive synthesis is responsible for the most basic organisation for what we perceive. As he notes, "for a sensory object to be endowed with meaning, it must be encountered beforehand as a fully determined, ready-made whole which remains identical with itself despite its changeable mode of appearance" (Bongiorno, 2015, p.13). As we have seen, although when I perceive a container I am presented with a concrete perception of one side of the object, I nevertheless apperceive the absent or empty profiles and thus experience the object as a whole. When I move around the container the profiles are perceived as joined together into the same object. Thus, not only does this synthesis let me perceive "the object as identically the same throughout its multiple aspects, but it also allows for the fact that every limited perspective on the object automatically reflects the unity of the thing itself" (Ibid. p, 12).

Now, he claims, previous thinkers working with a weakened sense of passive synthesis have made the assertion that in the prior stages of delusional perception the diverse sensory impressions presented by objects of experience may no longer be synthetically integrated with each other, the consequence being the undermining of their internal

cohesion (see, Wiggins, Schwartz, and Northoff, 1990; Wiggins and Schwartz, 2007, Uhlhaas and Mishara, 2007). Put crudely, they suggest that when some breakdown occurs in passive synthesis, sensory objects are shattered into a variety of incompatible pictures and lose their precise meaning. As a result, since perception is no longer capable of presenting the object itself, "what is actually experienced, say, the hollow part of a teacup, may become extremely puzzling and make room for the formation of new possible meanings" (Bongiorno 2015, p. 13, see also, Fuchs, 2005, 2009).

Ultimately, Bongiorno takes issue with this approach because it fails to explain how often in delusion perception, meaning is immediately experienced as imbued in the object. In contrast, those working with a weak sense of passive synthesis basically claim that because the most fundamental level of synthesis is disrupted, the subject then actively interprets the object in an abnormal manner, and in turn projects delusional meaning onto the object. Bongiorno contends that if we are to take the subject's experience at face value, specifically, meaning can be found already there in the sensory world, then we will need to work with passive synthesis in the stronger sense. By this, he means the sense in which passive synthesis is not simply considered as the very basic condition under which an object can have a meaning for us, but rather as the principal function involved in any perception of meaning. In order to demonstrate how this is the case he invites us to closely examine the elements that make up the structure of passive synthesis itself. This will be the topic of the next section.

**How we Perceive Meaning**

The first of the elements that make up the structure of passive synthesis is 'affection'.[10] Bongiorno points out, for Husserl, nothing can become an object for us unless it affects the ego in such a way that the ego is compelled to take notice of it (Ibid., p. 15). As Husserl himself notes: "any kind of constituted sense is pregiven insofar as it exercises an affective allure, it is given only insofar as the ego complies with the allure and has turned to it attentively, laying hold of it" (2001, p. 210, cited in, Ibid.).

We should take note of two things here. First, he advises us to keep in mind that the affective pull issued from the object happens in some sense before we are paying attention to it. Put differently, the moment of affection can be considered an achievement of passive or pre-reflective consciousness, which is itself, not produced, or

[10] Note, this is a technical term and does not in this context specifically refer to an emotional state.

attentively noticed by the ego (De Roo, 2013, p. 80). Simultaneously, the affective pull is never neutral, but always curiously significant to the subject. As Bongiorno notes, "the affective allure can motivate the subject to automatically constitute (i.e. make sense of) the object in a certain way" (2015, p. 15).

Bongiorno asks us to consider another well-known example, whereby he was preoccupied with a menial task and did not realise that music was playing outside; suppose that a particular tone made him aware of a certain melody. Although he was not consciously aware of the entire melody in the first place, we can say in this instance that the particular tone exerted an affective pull on him to be constituted as part of it. He further clarifies:

> [I]t is clear that a discrete tone could not be experienced as part of a melody if the melody had not already been formed as a musical whole. That being so, the affective enticement must have arisen from mental processes which had provided for the experiential unity of the melody without being noticed by the ego […]one can also grasp the sense in which the affective allure stemming from the tone can be deemed significant rather than merely mechanical; the tone is not just a vibration of air striking my ear, but is directly recognised as part of an intelligible structure, namely, as part of a melody (Ibid., pp.15-16).

Thus, on his view, one could argue that the affective pull which the object perceived, exerts on our consciousness can itself stimulate us to make (reflexively) a certain sense out of it.

Bongiorno provides another example to further illuminate the above claim. When we see something new, the existing content of our consciousness is passively paired with something similar in our previous experience, something that combines an affective allure with the actual significance it has for us. For example, Husserl remarks that "when we see a dog, we immediately anticipate its additional modes of behaviour: its typical way of eating, playing, running, jumping, and so on" (1973a, p. 331). Thus, Bongiorno claims that here, as well, we can say that (a) affection allows us to make immediate sense of the thing perceived, and (b) that this depends on processes which play a crucial yet largely unnoticed role in our mental life.

He then goes on to outline the processes that allow affection to have the kind of significance that can exercise an immediate pull on us, and by implication allow us see to what extent this may also apply to "full-fledged meanings". He notes that Husserl distinguishes the mental processes for affection into two synthetic regularities, namely,

the synthesis of time-consciousness and the synthesis of association (Bongiorno, 2015, p. 16).

Time-consciousness denotes the universal framework that allows for the organisation of conscious experience, for the identity of all things presented to consciousness across time, and also for their relation to one another in terms of coexistence and succession (Husserl, 2001, pp. 170-174, cited in, Ibid.). This process, or synthesis, consists of three co-dependent moments that reflect the immanent temporal stream of conscious experience (Husserl, 1964 p. 48). Within this tripartite temporal frame there is what Husserl calls 'primal impression', which is the phase of consciousness that is concurrent with the 'primal presence' or the 'primary originarity' of an object. However, this moment cannot exist in separation from the phases that precede and follow it. Namely, "'retention', which furnishes us with a lasting grip on the just-having-been stage of experience, and a 'protention', which implicitly anticipates what is about to happen in the future" (Bongiorno, 2015, p. 16).

Bongiorno is keen to emphasise that this structure does not merely denote the successive phases by which something can be perceived as a temporal frame. He explains:

> It also allows for the fact that the entire horizon of our past life is capable of being retained over the course of our experiences. Returning to our earlier examples, it is not only the case that the elapsed stages of a melody can be passively recalled when we perceive a discrete tone as part of it. Indeed, it is also possible that our having seen a dog before may tacitly inform the way we perceive similar animals in the present (Ibid.).

Yet, he makes clear, the synthesis of time-consciousness is a necessary, but not a sufficient, condition to produce such experiences.

Although Husserl tells us that the temporal structure of conscious or time-consciousness allows for the most general framework under which all our previous experiences and the object of our present experience can be linked together, he is adamant that it does so in complete abstraction from content. He remarks that this particular synthesis essentially connects all things of which "we become conscious originally in passivity as being, no matter what their content may be and however else they may be constituted as unitary objects with respect to content" (Husserl, 2001, p. 173, cited in, Ibid.). Thus, he argues, the synthesis of time-consciousness cannot be thought independently from the synthesis of association.

The latter is outlined as "the purely immanent connection of 'this recalls that' [or] 'one calls attention to the other'" (Husserl, 1973a, p. 75). Bongiorno notes:

> This implies that what Husserl means by association is not a causally determinable connection between psychophysical events, but rather refers to the subjective mode in which present, retained or anticipated mental contents implicitly allude to one another. The contentful nature of association becomes apparent if we consider that all associative pairings normally occur in terms of contrast and similarity (2015, p.17).

He points out that this is the case in both of the examples he provides. To be clear, one notices that some music is playing outside their window when a louder tone stands in contrast to the background of a quieter melody. Similarly, one's current experience of a dog (for example of her wagging tail) is immediately paired with previous retentions where they have had similar experiences.

Bongiorno thinks that since we have shed light on the mutual articulation of temporal and associative syntheses, we are now in a position to properly grasp their role in affection. Since Husserl frankly regards the synthesis of association to be a 'higher continuation' of the synthesis of time-consciousness, Bongiorno suggests we treat them as a single integrated synthetic structure, which for simplicity's sake, he labels "association" (Ibid.). With this in mind, he asks us to consider why Husserl reasons that everything that affects us must have already passed through the synthesis of association. In short, Husserl's view is that affection itself consists of an associative awakening, that is, either a tendency to reproduce an experience from retention, or a tendency to anticipate a future experience. Bongiorno notes that this is exactly what Husserl means when he writes that "affections are constantly at work beyond themselves" (2001, p. 206, cited in, Ibid.). Every affective prominence must depend on the relationships of contrast and similarity with experiential contents that are awakened through acts of associative pairings.

With that in mind, and this is a crucial point, we could argue that associations exercise a purely passive constitutive effect on the affective object, meaning that they allow one to automatically make sense of it (Ibid.). This seems to have a particular truth in the case of similarity. For example, Bongiorno says, I can successfully interact with a dog because I have been similarly affected in the past, and thus most of its behaviour is already familiar to me. Or, to take another example, every time I see a particular container, I can unreflectively anticipate how its sides, back, and inside will look,

precisely because I have encountered containers before. As De Roo points out, "the similarity between present affective pulls and relevantly similar, previously experienced affective pulls tends to produce similar characteristics in the present as were experienced in the past" (2013, p. 81).

This critical role played by associative synthesis in affection is entirely passive. Or, put another way, at this level of experience, associations occur without the subject being in conscious control (Biceaga, 2010, p. 55). Therefore, we should be cognisant of the fact that associative chains are not produced by means of explicit inferences. More precisely, a subject does not have to at first perceive something, then refer back to a retention from past experience and infer the similarities between both experiences. Rather, as Bongiorno notes, "the constitutive effect occurs as soon as the object comes in sight, for the associative synthesis is inseparable from the perceptual act itself" (2015, p. 18).

From what has been said so far, it might seem that the sense-giving effect that associative chains exercise on the affective object is restricted to the impressional sphere, namely, "to a mere recognition of similarity between disparate experiential contents" (Ibid.). If that were the case, then my actual perception of the container could only affect me on the basis of my having seen a container before, with absolutely no reference to the meaning learnt through social interaction (e.g. a container is a place where things are stored). If meaning must result from conscious processes and the associations occur unconsciously, it would perhaps seem that the only sense one can immediately make of an affective object is to see it like other similar objects previously perceived. However, Bongiorno notes, "if that were the case, there would be no room for such things whose conceptual meaning is passively received" (Ibid.).

The question for Bongiorno, then, is whether "the *passive associative synthesis* at play in perceptual consciousness can account for the fact that meanings may become themselves affectively prominent" (Ibid., author's italics). He clarifies:

> Now, if we assume that this passive level of experience can only be gained by abstracting from active mental processes (e.g. acts of understanding and meaning-bestowing acts), the simple fact of posing such a problem would appear self-contradictory. However, importantly, Husserl observes that when we abstract the workings of passive synthesis from any conscious activity, we do so 'as if there were no modes of knowledge acquired in the life of the world, aesthetic and practical interests, values, and the like' (2001:198, cited in, Ibid., see also, Steinbock, 2004, p. 23).

Put differently, the subsuming of passivity to "pure passivity" is a theoretical manoeuvre that helps to describe the most basic layer of our experience, but can by no means reflect the lived reality of our habitual, confident attitude towards the world of daily life.

Thus, Husserl argues, "under the title of passivity, [there is] also the secondary passivity, a passivity that has issued from activity" (2002, p. 64, cited in Pulkkinen, 2013 p. 133). The crucial point is this: even if one accepts that affection is a form of consciousness that falls outside any concurrent participation on the part of the subject, "it does not follow that its contents and synthetic functions must be altogether immune from the effects of preceding conscious activities" (Welton, 2000, p. 253). Put differently, it is possible that prior social relations regulate the sense in which things are given to us in sensible receptivity. As Bongiorno notes, "if we have already learnt that S is p, the affective allure that Sp exerts on us, in the form of a 'passive coming to mind', can be thought of as deriving from previous acts of understanding" (2018, p.18). Sokolowski elucidates, "we no longer stand before it as though we were perceiving it for the first time [but, instead] we now 'see' the object with the sense we have given to it" (Sokolowski, 1964, p. 71).

Bongiorno provides an example; perceiving a hairdryer plugged in near a sink as dangerous could hardly be enabled due to my having a similar experience previously. No, it is rather facilitated by the fact that the hairdryer now affects me with respect to my knowledge about the danger of using electrical equipment near water. Put differently, we can say that affection is laden with much of the knowledge we have actively gained and passively retained throughout our lives. To comprehend what happens in this mutual articulation between passivity and activity, he asks us to return to associative synthesis (Ibid.).

As noted, the constitutive processing of association is a vital precondition for anything to affect us at all. Bongiorno further elucidates:

> This entails that temporally different contents in consciousness are paired together in a way that elicits a primordial, preconceptual sense-constituting performance. Now, crucially, since the scope of passive consciousness is not confined to the sensory field but rather is already informed by previous activities of the intellect, the role of association should be reconsidered accordingly. That is, association might not simply be responsible for the fact that perceptible

> objects affect us, but also for the fact that they do so in a specifically meaningful way (2015, p. 19).

Put differently, for him, it seems fair to argue that associative synthesis is not limited by the mere referencing of sensible contents to each other, "but indeed extends itself to encompass the meanings we have actively conceived in our past conscious life" (Ibid).

In this regard, he notes that Husserl talks about layers of meaning being associatively transferred from familiar things to any similar things currently experienced. Thus, "the constitutive effect that the associative synthesis would exert on the given object is not just that of supplementing the living present with retained experiences" (Ibid.). For example, as soon as I look at the new container that my brother has bought for the farm, it is not just that the empty or hidden sides which I co-perceive that are synthetically implied in my current perception. Rather, the associations functioning in passive synthesis are appropriate to automatically supply the overall meaningfulness that we have learnt to connect with the idea of a container, and that now makes it possible for the object in question to appear as a 'container' (e.g. something in which to store animal feed).

To rearticulate his position, affection is the basic condition for any sensory object to enter consciousness; and, on the other hand, we have found that the synthesis of association and synthesis of time-consciousness is what first makes affection possible. Thus, he contends that because the associations carried out through passive synthesis also include previously acquired meanings, "it becomes possible to see how it is that such meanings could be infused with the objects themselves and affect us directly through the senses", as he thinks is the case for delusions (Ibid., pp. 19-20).

**Conclusion: A Robust Passive Synthesis**

Above, I provided what I take to be a case where the empathiser did not have to move to an imagination-like empathy, or phase two of Stein's account of empathy, because they could fulfil the empty presentification by moving to a new genuine perception.

To rearticulate that in terms of what has been discussed: as I walk through the frame of the door, I am immediately affected by the bodily expression of joy my partner exudes. In the next moment, holding that experience in retention, I walk past the door, which partially obstructs my view, and I see a person on the television playing Irish music who I instantly recognise as her dearest friend. Now, as noted, we have seen that passive

synthesis is not restricted to the mere relating of sensible contents to one another, rather, it extends itself to incorporate the meanings we have actively apprehended through our previous conscious experiences. In other words, the associations functioning in passive synthesis are appropriate to immediately supply the overall meaningfulness required to understand my partner's joyful experience.

That is, because I am intimately attuned to my partner's bodily expressions, and because I have a nuanced understanding of her love of traditional Irish music and her friend, who I have met on many occasions, I can therefore richly grasp her experience of joy. As Bongiorno notes: "although the associative synthesis is not exempt from the influence of previous active accomplishments of the ego, this does not alter the immediacy with which associations occur in perceptual awareness" (Ibid., p. 19). Husserl makes clear, the apperceptive transfer of meaning occurs "passively, instantly, and with one stroke" (1973b, p. 210).

However, there is one significant difference between Bongiorno's work and my own, namely, the type of accounts from which he wishes to depart from, and in my case, build upon. More precisely, the targets of his work are those that only consider passive synthesis to be the basic processes that structure experience, and thus what meaning can merely arise from. Not satisfied with this, he puts forward an account of passive synthesis where the subject not only experiences objects as 'ready-made' and 'present-to-hand', but as meaningful.

Instead, the accounts I wish to build upon would, like Bongiorno, accept that passive synthesis does not just provide the basic structure for our experiences, but also allows for those experiences to be meaningful—particularly in the case of empathy. As explored in the previous chapter, when I am presented with another, I do not just experience them as an inanimate lump of flesh, rather, I always encounter them as an expressive whole or embodied mind. As Jardine notes, "in empathy the 'merely physical' is at no stage given, rather what presents itself is a whole, the person, with two intertwined dimensions, the lived body as essentially personally significant, and the personal subject as essentially manifesting itself in the lived body" (2014, p. 280).

Nonetheless, if we examine what can be given at the most fundamental level or the level of passive synthesis for Husserl and Zahavi, then what I first encounter as a meaningful

expressive whole is still quite basic. As Zahavi notes, for Husserl, "the most fundamental form of empathy is the one that allows us to apprehend the perceptually given body as a lived body, that is, most fundamentally as a sensing body" (2014, p. 138). It is precisely this kind of empathy that Zahavi is keen to endorse, because of the role it plays in revealing the other as minded and as an expressive lived body with his or her own irreducible first-personal experience. However, as we have seen in endorsing this narrow account of empathy, it can only give us a basic grasp of the other's mental life, and this is because it is intuitive in nature as it "happens passively and associatively" (Ibid.).

We have already seen that Stein posits a tripartite account of empathy to account for how higher forms of empathy develop on this initial grasping. Zahavi endorses something similar, although he refrains from calling it empathy, and thus recommends that we explore how higher levels of interpersonal understanding are built upon this fundamental process (2014a, p. 169). Husserl too, contrasts this most basic and fundamental kind of empathy with a more active form (i.e. active synthesis) that targets the understanding of that which is expressed in bodily expressions, namely, beliefs, decisions, and attitudes (Ibid., p. 137; Moran, 2004, pp.299-301).

Yet we have seen time and time again that twins can grasp each other's mental and emotional life without having to engage in an active or imagination-like type of empathy. Thus, I contend, with regards to empathy, Zahavi and Husserl are working with a conception of passive synthesis that can be understood in a weaker sense in this context, and thus I propose if we are to account for the kind of exceptional mutual comprehension we find in the case of twins, we need to consider passive synthesis in a stronger sense. That is, we need to conceptualise it as the principal function involved in allowing twins to grasp each other in a meaningful way. Or put differently, at least in relation to twins, passive synthesis, as it occurs at the most foundational level of empathy, allows for the meaningful other to be grasped more profoundly.

Thus, in the case of twins, affection understood as the basic condition for something to enter consciousness is laden with all of the information each twin has gained and retained passively throughout their lives. Put differently, each twin is so attuned to their co-twin that when they experience each other passively and associatively they can grasp each other in an intuitive-perception-like manner that is (at least somewhat)

sophisticated rather than basic. What is more, it is not just twins that claim they are able to comprehend each other in such a fashion. Like my example above, older couples who have been together for an extended period of time report a similar phenomenon (Piontelli, 2002). However, the process is far more richly developed, and thus is more intense and frequent in twins. Twins are so attuned to each other's expressive lives that particular manifestations of expressive bodily phenomena can allow them to grasp each other's complex mental and emotional lives intuitively or passively and associatively.

However, one may argue that even though there is a wide range of ways in which we can express our experiential life, there are also limits to this, for instance a red face can express anger, shame or embarrassment. Therefore, how, without moving to a higher form of intentionality or empathy could each twin differentiate these?

We will explore this in more detail in the succeeding chapters. For now, the simple answer is that twins exist in a world together from the very beginning. In other words, twins are already in a worldly situation, and their way of being together and understanding each other is codetermined in its meaning by the situation at hand. Put differently, young twins, and in some cases older twins, share an exceptional amount of time together (see, Bacon 2010; Davis and Davis, 2010; Kohl, 2001). When each twin grasps the other, Twin A might wrinkle her brow or nod her head, but these countenances are not definite. They do not disclose each twin's emotional or mental life in isolation of context. These expressions always ensue in a given situation. As Zahavi states: "our understanding of the context, of what comes before and after helps us to understand the expression" (Zahavi, 2005, pp. 151-152). A nodding of a head can take on different meanings in different contexts. What expressive phenomena signify in a particular case becomes comprehensible to each twin in their worldly situation. Again, to quote Tara and Christine, "when something happens or is going to happen around us, we can just look at each other and automatically know what the other person is thinking" (Kohl, 2001, pg. 52).

In other words, twins are not just highly attuned to the particular and nuanced expressive bodily phenomena of their co-twin but are also highly attuned to the contextualised social settings that make expressive phenomena unambiguous. Indeed, we will see in Chapter 7 that young twins, and particularly monozygotic twins, have highly developed primary and secondary intersubjective capacities in their interactions

with one another when compared to their same age singleton peers. That is, young twins are able to engage in sophisticated pre-verbal cooperative interactions with one another.

In sum, it would seem that previous phenomenological accounts of empathy fail to do justice to EMU in the case of twins because their accounts are underpinned by a notion of passive synthesis that is too narrow. When expanded, passive synthesis understood as a means of intuitively making sense of contextualised expressive bodily phenomena in a more profound manner, allows us to begin to make sense of EMU in twins.

Crudely put, EMU is underpinned by a robust passive synthesis that enables each twin to have an exceptional ability to understand their co-twin through expressive phenomena which become unambiguous in the context of a shared world.

It seems then, a phenomenological perception-like account of empathy with a modified notion of passive synthesis can satisfy our criteria. (i) Each twin comprehends the other via expressive bodily phenomena because minds are not hidden behind overt behaviour, rather they are embodied, which means each twin can directly experience aspects of the co-twin's experiential life. (ii) Perception-like empathy underpinned by a robust passive synthesis along with the situations that contextualise expressive bodily phenomena allow each twin to make sense of the other in a complex manner that is (a) rapid or intuitive, and (b) direct or non-inferential. In other words, twins can intuitively experience greater aspects of their co-twin's experiential life, because they are intimately attuned to nuanced manifestations of the other's contextualised expressive bodily phenomena. (iii) Even though, a more robust passive synthesis allows for a deeper understanding in the case of twins, this does not lead to an abolition of the self-other distinction. Twins are still temporally and spatially distinct subjects of experience with an irreducible first-person perspective, which entails a pre-reflective self-awareness. In other words, twins cannot experience their co-twin in the same manner in which they experience themselves. There is still an inaccessibility, which means that a twin's access to the first-person experience of their co-twin remains a second person access.[11]

[11] One could argue that Wittgenstein dispelled the myth that we have an inferential, third-person access to other minds, but the two main accounts of social cognition from which the thesis distances itself maintain, in one form or another, that the only access that we have to the mind of others' is via this mechanism.

However, one might argue, if it is the case a more robust passive synthesis presents more frequently and intensely in twin-twin social interaction, and this is merely because they have spent an exceptional amount of time together, why don't we observe the same phenomenon as intensely and frequently in all cases of social interaction where both agents spend an exceptional amount of time together (for example, non-twin siblings, couples, friends, and even some work colleagues)? Hence, more will need to be done if we are to adequately substantiate this hypothesis.

Therefore, over the next few chapters, we will undertake a study of the ontogenesis or development of the exceptional intersubjective capacities found in twin-twin social interaction to demonstrate why and how this more robust passive synthesis presents in their social relations. From this we shall see that twins, and particularly monozygotic twins, follow a developmental trajectory that differs significantly from their single-born counterparts. Moreover, this will allow us to place twins within the theoretical framework of interactionist approaches to social cognition, rather than theory theory or simulation theory approaches. However, to do this, the interactionist approaches will have to be modified, as presently they do not provide the conceptual resources for studying EMU in twins. Before we get to this point, however, it is crucial to understand that this developmental trajectory begins in gestation, thus, in the next chapter, we examine foetal body schematic development in cases of human gestation concerning twins.

---

It is important to note, that I do not claim second person access is exclusive to twins; nor do I commit myself to a thesis that claims the "main conceptual distinction […] between first-person and non-first-person access to a mind is the distinction between immediate, non-inferential, and mediated, inferential cognition". Rather, I follow previous phenomenological thinkers (see, Zahavi, 2014a, Rathcliffe, 2013a, Merleau-Ponty, 2012, Gallagher, 2016) by introducing the notion of second-person access as the primary access we have to the embodied and embedded mind of the other. That is not to say that we do not use third person inferential processes in comprehending the minds of others, but rather that these more complex forms of interpersonal understanding are built upon a more fundamental second-person access which allows us to have a *basic* access to the other's experiential life. My main claim then is that in cases of twin-twin social interaction the second person access each twin has to the embodied and embedded mind of their co-twin is at least somewhat more sophisticated and that this is underpinned by a robust passive synthesis or novel operative intentionality.

In short, the difference between first-person, second-person and third-person access are, (a) third-person—mediated, inferential cognition; (b) first-person—immediate, non-inferential; (c) second-person—an immediate, non-inferential access to the mind of the other which is basic (but seems to be more complex in the case of twins).

# Chapter 6: Foetal Body Schematic Development in Twin Gestation

## Introduction

The task of this chapter is to substantiate the hypothesis set out in the previous chapter, namely, that a robust passive synthesis presents in cases of exceptional intersubjective capacities we find in twin-twin social interaction. The rationale behind this is to understand why this robust passive synthesis occurs more frequently and intensely in the relations between twins, rather than in the close relations of non-twins.

One way to demonstrate how this robust passive synthesis manifests more frequently and intensely in the social relations of twins, is to carry out a study of the ontogenesis of their exceptional intersubjective capacities. To do this, I anchor my account in the work of several thinkers beginning with Merleau-Ponty. However, the fact that Merleau-Ponty provides a rich and sophisticated ontogenesis of self-consciousness and interpersonal understanding is not the only reason I turn to him. His work also offers plenty of resources for understanding the nature of passive or perceptual synthesis, or what he more generally refers to as operative intentionality.

Operative intentionality, or pre-reflective consciousness, for Merleau-Ponty is primarily the intentionality of the body-subject. This manifests as a pre-reflective body schematic intentional substratum, or simply body schema, and thus is the primary way in which we encounter the world and others.

For Merleau-Ponty, the infant does not immediately have a functioning body schema. First, they must learn how to distinguish themselves from others in a stage of development called syncretic sociality. However, recent research on infant imitation shows that contrary to what Merleau-Ponty claims, the infant does already have, from birth, a functioning body schema. However, while his developmental milestones need to be reformulated, he nonetheless offers rich resources for understanding how operative intentionality as the *modus operandi* of the body schema manifests developmentally, and therefore it would be an error to disregard his work.

Following this, I move to explore recent work from the phenomenology of pregnancy which demonstrates that the gestational mother does not experience the foetus as

completely indistinguishable from herself, but rather as a sensory motor being, or a being with a body schema. The same is true in cases of human gestation concerning twins. Hence, it would seem that a functioning body-schema first manifests in gestation.

At this point, it becomes salient that if we are to understand this robust passive synthesis, or operative intentionality, it will be necessary to explore the body schematic development of twin foetuses. However, first I will need to anchor my work in accounts that have examined body schematic development in singleton foetuses. Jane Lymer offers excellent resources for this and it is from her work that I develop my own.

Lymer demonstrates that the foetal body schema is initially formed by the habituations of the maternal body schema, which through a process of transformation and reformation in gestation imprints her body schema onto the foetus. By drawing on empirical evidence, she shows that late in the second trimester, the maternal-foetal relation becomes one of reciprocity and communication because the foetus has developed a functioning body schema. Thus, what occurs at this stage is a body schematic affective coupling or bonding between the gestational mother and the foetus, which sets the foundations for affective relations with adults and older children post-partum. However, while Lymer mentions twins at several points in her work, she fails to consider the significant impact developing alongside another embryonic other in gestation might have on a twin's body schematic development.

Drawing on empirical literature, we shall see that foetal body schema formation is accelerated in twin pregnancy due to inter-twin contact that is originally underpinned and facilitated by the transformation and reformation of the maternal body schema. Once the foetal body schema is formed, twins undergo a body schematic coupling with both the maternal body schema and the foetal body schema of the co-twin. Thus, twin-twin foetal relations from early in the second trimester can be understood as reciprocal and communicative. However, it is important to note that the coupling that occurs between the foetal body schemas of each twin is still underpinned by the mature body schema of the mother.

From this, I will argue that when born neonate twins are bonded with the mother, and it is this bond which primes them for affective intersubjective relations with older children and adults post-partum. What is more, they are also bonded with their co-twin, and this bond primes them for post-partum affective intersubjective relations with each other. I

will further support this claim by examining literature on co-bedding in premature neonate twins, which shows that twins who are put side by side in one incubator tend to thrive in comparison to twins that are not. I argue that this is because they are body schematically coupled or bonded in gestation, and therefore require reciprocal and communicative physical contact with each other in order to have a smooth operative intentionality, which enables further development of the body schema.

Taken altogether, this information demonstrates that from early in gestation the developmental trajectory of twins differs significantly from their single-born counterparts. However, at this point, I will also make a distinction between dizygotic (fraternal) twins and monozygotic (identical) twins, as it seems the thickness of the septum, which separates these different types of twins in gestation, may affect their ability for body schematic coupling, and therefore the affective bond which primes them for post-partum social interaction with each other.

I will conclude that it is evident that operative intentionality—which is the *modus operandi* of the body schema—has a different developmental trajectory in twins, in particular monozygotic twins. This substantiates my earlier claim that the exceptional intersubjective capacities we find in twins is enabled by a robust passive synthesis or more developed operative intentionality. However, to be truly able to claim that this is the case, we will need to continue our study by exploring the developmental trajectory of twins post-partum. This will be the focus of the last chapter where I will situate twins within the theoretical framework of modified interactionist approaches to social cognation rather than theory theory or simulation theory accounts.

**Passive Synthesis in Merleau-Ponty**

In the last chapter, I argued that previous phenomenological accounts (particularly Zahavi and Husserl) cannot do justice to exceptional mutual understanding (EMU) in twins because they are underpinned by a concept of passive synthesis that is too narrow. Instead, I put forward the hypothesis that a robust passive synthesis presents in the exceptional intersubjective capacities we find in twin-twin social interaction. In other words, twins have an exceptional ability to intuitively grasp their co-twin's experiential life, because they are highly attuned to the nuanced manifestations of one another's contextualised expressive bodily phenomena.

However, as noted, one may pose the question that if this is actually the case in twin-twin social interaction, why do we not see this robust passive synthesis present as frequently and intensely in similar cases where the agents spend an exceptional amount of time together? It seems the most effective way to show how and why this robust passive synthesis presents more frequently and intensely in the social relations of twins, is to carry out a study of the ontogenesis or the development of their intersubjective capacities.

However, before we can proceed to this point, it will first be necessary to anchor our own study in similar phenomenological accounts. The phenomenologist most explicitly associated with this kind of approach is Merleau-Ponty. Brock Bahler remarks: "Merleau-Ponty's philosophy of childhood is the driving force behind his entire account of the self, others, and world in his philosophical project" (2015, p. 206). For Merleau-Ponty the ontogenesis of these early experiences is noteworthy because it "lends insight into the developmental origins of self-consciousness as well as the nature of face-to-face social interaction and interpersonal understanding in mature adults" (Krueger, 2013b, p. 510).

Another important reason to utilise Merleau-Ponty's philosophy is because he pays particular attention to Husserl's notion of passive synthesis, or what he more generally refers to as *operative or bodily intentionality.* More precisely, the starting point for Merleau-Ponty's philosophy is the last phase of Husserl's thought, particularly that which comes from *The Crisis of the European Sciences* and unpublished manuscripts.[12] In the preface of the *Phenomenology of Perception,* Merleau-Ponty notes the significance of the distinction that Husserl makes between operative intentionality and act intentionality. He remarks:

> Husserl distinguishes between act intentionality—which is the intentionality of our judgments and of our voluntary decisions (and is the only intentionality discussed in the Critique of Pure Reason) —and operative intentionality

[12] Merleau-Ponty does not offer much criticism of Husserl in his *Phenomenology of Perception*. However, a string of commentators have criticised Merleau-Ponty for not doing so (Madison, 1981; Dwyer, 1990; Dillon, 1997; Carman, 1999), as they claim that Merleau-Ponty's work constitutes a significant break from the apparently overly cartesian, solipsistic, disembodied phenomenology of Husserl. However, recent scholarship on the topic extensively shows, rather than constituting a break with Husserlian phenomenology, Merleau-Ponty was in fact justified to claim that his *Phenomenology of Perception* is a continuation of Husserl's work—his unthought thought so to speak. Particularly, that which is to be found in Husserl's later work and the unpublished manuscripts (so in a sense, he does break with Husserl but only the early Husserl of *Logical Investigations*) (Zahavi, 2002; Smith, 2007; Moran, 2010).

> (fungierende Intentionalität), the intentionality that establishes the natural and pre-predicative unity of the world and of our life, the intentionality that appears in our desires, our evaluations, and our landscape more clearly than it does in objective knowledge (Merleau-Ponty, 2012, p. xxxii).

As explored in the previous chapter, Husserl outlines two kinds of intentional constitution at many points in his philosophical career, namely, active and passive synthesis. According to Ronald Bruzina, Merleau-Ponty phrases active genesis (synthesis) as "'intentionality of act' as against 'operating intentionality', the latter corresponding clearly to Husserl's 'passive genesis' [synthesis]" (2018, p.167, see also, Fuchs, 2009, p. 551; Landes, 2012, p. xxxi). It is this "mode of intentionality that Husserl conceptualises as operative intentionality" that Merleau-Ponty mainly focuses in the *Phenomenology of Perception* (Reuter, 1999, p.71). This is the primary way in which we encounter the lived world, so much so that he claims, "beneath act intentionality—and in fact as its very condition of possibility – [there is] an operative intentionality already at work prior to every thesis and every judgment (Merleau-Ponty, 2012, p. 453).

Hence, not only will Merleau-Ponty's work allow us to anchor our ontogenetic study in his own, but it will also allow us to further explore and understand the nature of the robust passive synthesis that manifests in twin-twin social interaction, or, as I will from now on refer to it—operative intentionality. In order to fully appreciate this, we will in the next section examine the nature of operative intentionality. From this we will see that operative intentionality is the intentionality of the body-subject and manifests as a pre-reflective body schematic intentional substratum or, simply, body schema, and thus is the primary way in which we encounter the world and others. Hence, it will become clear that if we are to understand how a robust passive synthesis or more developed operative intentionality presents in the social interactions of twins, it will be crucial to describe their body schematic development.

**Operative Intentionality**

In Merleau-Ponty's view, one of Husserl's most significant contributions to phenomenology was his introduction of operative intentionality. Merleau-Ponty sets himself the task of showing how operative intentionality is essentially the intentionality of the body-subject. As he remarks, "My body is the common texture of all objects and is, at least with regard to the perceived world, the general instrument of my 'understanding'" (Merleau-Ponty, 2012, p. 244). Therefore, operative intentionality "is

the body-subject's concrete, spatial and pre-reflective directedness towards the lived world. The pre-reflective moving body is in itself intentional, reaching out towards the world" (Reuter, 1999, p. 72). In other words, all consciousness has a pre-reflective substrate or matrix in the body. Thus, consciousness originates through the body in the form of pre-reflective consciousness, as the familiarity that I have with myself (Merleau-Ponty, 2012, pp. 90-91; see also, Landes, 2012, p. xlvi)

As should be evident from the last chapter, a central concern of phenomenology is to give an account of perceptual experience. Indeed, for Merleau-Ponty to examine the nature of perception is to study the nature of consciousness, "as only through perception can there be the experience of being in the sense that one perceives oneself and others" (Lymer, 2010, p. 84). For him, self-conscious experience is always underpinned by an intentional pre-reflective body schematic substratum, which is perceptually familiar to a subject both kinaesthetically and proprioceptively.

To sustain my balance whilst walking, my body, without my self-conscious participation, will continually do many minor muscular adjustments, which I do not experience in an explicit or voluntary way. For example, Lymer remarks that, "my body makes these meaningful and intentional adjustments without my conscious direction and allows me to sit in my chair and swing from side to side while contemplating what to write" (Ibid., p. 85). She further clarifies:

> I can focus my attention on what I am trying to write or away from my body and not on what my body is doing, yet the swinging is intentional because should I stop and think about it as I have just done, then I will realise that I find it soothing and helpful in ordering my thoughts although I never made the decision to swing for this purpose (Ibid.).

It is important to note, swinging in one's chair is not strictly an unconscious activity. If someone were to ask me to stop swinging as it was distracting them, I would know that I had being doing so for quite a while, although I had not been explicitly aware of this until it was pointed out to me. Merleau-Ponty employs the term pre-reflective rather than unconscious to account for these 'in between' conscious experiences. One is obviously not unconscious during these experiences, nor are they explicitly conscious, yet, they are able to become aware of carrying out such actions should they reflect on it.

Pre-reflective consciousness is always historical with regards to my reflective awareness, in the sense that it is not possible to catch oneself in a pre-reflective act, as

once we do the act is no longer given to us as pre-reflective. In other words, the act of bringing our pre-reflective awareness to conscious awareness is to reflect upon that act; hence the term self-reflective consciousness. Lymer clarifies:

> What we reflect upon however is different and it is this kind of phenomena that Merleau-Ponty is referring to when he argues that the adult human body in its prereflective aspect is self-conscious and intentional. Should I reflect upon my swinging in my chair, I will not be able to recall as many details of what I was doing as I know there is to recall. I could not tell you for example, how many swings I had made or where I was up to in my writing when I started (Ibid.).

Thus, although pre-reflective consciousness is directed into the world in a meaningful way and I have awareness of it, it nevertheless transcends one's full reflection upon it.

Merleau-Ponty employs the term body schema to account for our mature prereflective conscious activities, which form the basis for one's everyday lived experiences. The body schema can be understood similarly to what Gilbert Ryle (1949) notes when he says that for me to "know how" to do something—such as riding a bicycle—does not require me to explicitly understand or be able to explain what I do. In other words, it encompasses all of our everyday habitual skills and activities that happen without our explicit awareness—skills and activities such as cycling or walking. For Merleau-Ponty, our body schema includes several functional features:

> Like the way that there is only one consciousness with intrinsic aspects such as the prereflective and self-reflective, there is also only one body schema. However, Merleau-Ponty examines body schematic functioning from various aspects according to the different roles, meanings, or applications which it has in our lives and at different developmental stages (Lymer, 2010, p. 86).

Hereafter, I examine one of these aspects in particular: the "intentional arc". I will then in the next section move to examine the body schema as a whole.

Lymer notes, for Merleau-Ponty, "the intentional arc refers to the interconnection between habitual or skilful bodily action, affect and perception and how these situate us in the world" (Ibid.). The intentional arc expresses the range and temporal depth of my sphere of possible action. Merleau-Ponty states:

> [T]he life of consciousness – epistemic life, the life of desire, or perceptual life – is underpinned by an 'intentional arc' that projects around us our past, our future, our human milieu, our physical situation, our ideological situation, and our moral situation, or rather, that ensures that we are situated within all of these relationships (Merleau-Ponty, 2012, p. 137).

For him, the world is not independent of the body. This is because neither the body nor the world are independent from perception. It is the unification of the perceptual ties between our body and the perceived world that he describes as our intentional arc. Merleau-Ponty speaks at times of instances of these ties in a more specific sense which he terms "intentional threads", but this should not be taken to mean these can be separated out; rather, they should be understood as forming a milieu that gives salience to objects and others in the world.

Lymer uses many good and useful examples to help us understand this. Borrowing an example from Straus (1963) she asks us to think of a situation in which there is a fatigued swimmer and a competent swimmer both trying to reach a sandbar. She states that the distance perceived and the swimmer's felt experience "of the swim will be relative to the bodily and emotional state of each swimmer and the different factors represent that individual's intentional arc" (Lymer, 2010, p. 87). For the less competent and fatigued swimmer, the distance to the sandbar is experienced as being very far away and will be much more a focus of their attention than for the competent swimmer, who may not realise how close they are until they have hit the sandbar. Moreover, the intentional arc of each swimmer will not just be based upon their physical capabilities, but also within its current action the histories and expectations particular to each swimmer. Lymer clarifies:

> Should the competent swimmer be terrified of sharks and suddenly perceive a dark shadow in the water, her physical competence might well waiver. The tired swimmer who is unconcerned about what looms in the water will have a very different experience and perception of the swim (Ibid., p. 87-88).

This example demonstrates the given range of possible actions particular to the physical capabilities and autobiographical histories of each swimmer.

More precisely, this can be understood as our pre-reflective bodily awareness, "of our historical body in a particular lived space that comes through perception as a sphere of experiential 'I can' or as a sense of personal capability" (Ibid.). It encompasses the sphere of possible action relative to the particular individuals, as Spurling notes, the intentional "evaluates the potentialities of my whole environment, so that objects appear as graspable or out of reach, inviting or threatening, as obstacles or aids" (2013, p. 18). Therefore, "the extent of my reach is experienced not just physically but also affectively because affect is integral to this matrix of historical experience" (Lymer, 2010, p. 88).

The competent swimmer who has a phobia of sharks displays fear in the above example, and this will probably affect her physical ability by disrupting the intentional thread between her and the sandbar so that her attention focuses on the shape in the water. In contrast, swimming in waters where there is little or no risk of encountering sharks may enhance her competence. Therefore, her sense of 'I can' will vary and will be tied to the particular situation in which she finds herself. Hence, the world that we perceptually encounter and live through in any specific situation "requires that our various senses such as seeing, hearing, or touch, each of which have their own characteristic spatiality, operate in a unified and intertwined way" (Ibid.).

In the example above, the senses involved for the swimmers are those that are central "to physical bodily movement and so impact upon the intentionality and thus the capacity of my prereflective body to move out into the world in a certain way" (Ibid.). Lymer also asks us to consider an example where one's operative intentionality is comparatively dormant relative to their capacity for act intentionality:

> When waiting on the platform for the train which is running late, I will look into the distance (actually and temporally) and see a glimmer on the horizon, but when this glimmer is not accompanied by the sense of vibration and the odd metallic ring, I suspect that it was not the train but rather something else reflecting the light, and so I begin to project into the future the adjustments that will be required to make in my day should the train be much longer. My intentional arc in this instance is the sphere within which my body can extend my range of potential action while standing on the platform waiting for the train (Ibid. p. 89).

In this instance, this sense of affect and unification of the senses of spatiality and temporality together form a system of extended subjectivity which projects from the body into the world as an intentionality of the act—the intentionality of our judgments and of our voluntary decisions—in this context, Lymer needs to look out for the train and decide when she should call to let people know she will be late. This unification then, defines her particular embodied situation as the domain her particular 'I can' in a primarily temporal manner (Ibid.).

Should she start to get anxious while waiting for her train as her socio-historical sense of punctuality is intimately tied to her own sense of competence, then her intentional arc will narrow and contract so that her sphere of intentionality becomes focussed upon the next few hours, possibly exaggerating in her mind what will happen should she miss her meeting. However, if she is unconcerned by the late train, then she might spend the time

waiting planning her weekend, and so the temporal aspect of her intentional arc, her '*sens'* of achievable 'I can' will broaden from hours into days.

The double meaning of the French word '*sens'* is employed by Merleau-Ponty as concurrently denoting meaning and direction in order to stress the idea of meaning as also having a spatial orientation. He remarks:

> Beneath all of these meanings of the word *sens*, we find the same fundamental notion of a being who is oriented or polarized toward what he is not; and so we are always led to a conception of the subject as ek-stase and to a relation of active transcendence between the subject and the world. The world is inseparable from the subject, but from a subject who is nothing but a project of the world; and the subject is inseparable from the world, but from a world that it itself projects (Merleau-Ponty, 2012, p. 454, authors italics).

Lymer notes, "thus the very significance of the object must be linked to its orientation, as indeed is indicated by the double usage of the French word *sens*" (2010, p. 89, authors italics).

It should be clear by now that the above examples of the train and the swimmers differentiate between act intentionality and operative intentionality. As touched upon, act intentionality is the intentionality of judgings and other voluntary positing. In the train example, intentionality of the act is concerned with the phenomenology of abstract temporality. Lymer explains, "here the domain of intentional action is in the abstract and corresponds with us having thoughts about ourselves that can imagine futures and reflect upon our pasts" (Ibid., p. 91).

However, as noted, act intentionality is not the primary way in which we experience the world, as Moran notes: "Opposing the (Neo-Kantian) interpretation of intentionality as a voluntary, primarily cognitive act, Merleau-Ponty emphasises instead Husserl's 'functioning [operative] intentionality'" (2010, p. 179). Indeed, it is operative intentionality that is our primary way of experiencing the world, and this is made possible by the pre-reflective substrata of spatial motility or body schema, and so it corresponds to the intentionality expounded through the example of the swimmers above. For Merleau-Ponty, operative intentionality is the *modus operandi* of the pre-reflective substrata or body schema, hence, act intentionality is founded upon operative intentionality, as it forms the substratum of the intentional arc as we will see shortly in more detail.

To take stock, operative intentionality is the *modus operandi* of the pre-reflective body schema in habitual movement, and act intentionality generally encompasses the abstract world of explicit judgings and voluntary positing. Thus, one way that we can understand the intentional arc is—as the general term for how act and operative intentionality unite in such a manner as to situate a possible range and domain of potential action—thought and desire.

However, before we proceed, Lymer notes:

> There seems to be very little difference in the way that Merleau-Ponty employs the terms operant [operative] intentionality and the intentional arc when he refers to the prereflective body. Much of the division that I make explicit here is interpretive which I propose for clarity rather than any attempt to suggest that Merleau-Ponty made their division definitive. The terms could well be used interchangeably with little change to the exegesis (2010, p. 91).

I, too, take Lymer's division between operative intentionality and the intentional arc as a premise, however, I do so with the above caveat in mind.

As we have seen above, the intentional arc comprises an operative intentionality as the pre-reflective substratum on which intentionality of the act is founded. In order to demonstrate this, Merleau-Ponty examines the case of Schneider. Schneider, a veteran of World War One, received a wound to the back of his head due to a shell splinter in 1915, which caused a condition termed then as "psychic blindness" (2012, p. 105). He was treated by Gelb and Goldstein, and it is from their extensive notes that Merleau-Ponty draws.

In their notes, Gelb and Goldstein outline Schneider's pathology as a severance of the concrete and the abstract attitude, which respectively correspond to operative and act intentionality according to Merleau-Ponty.

While his eyes are closed, Schneider is unable to perform abstract movements, such as point; he cannot describe the position of his body or even of his head, nor the passive movements of his limbs. Finally, when his head, arm, or leg is touched, he cannot say at what point his body was touched, even with his eyes open he cannot perform abstract movements on command in the normal immediate manner such as pointing to his nose (Ibid., p.106). However, he is capable of grasping his nose, and will whisk a mosquito away and can perform habitual acts like removing his handkerchief from his pocket to blow his nose. He is also able to perform abstract movements if he is permitted to watch

his limbs, these symptoms are interpreted by Merleau-Ponty, as being relevant to their purpose or situation. He remarks:

> The patient is conscious of bodily space as the envelope of his habitual action, but not as an objective milieu. His body is available as a means of insertion into his familiar surroundings, but not as a means of expression of a spontaneous and free spatial thought (2012, p. 106).

Lymer notes the intentionality available to Schneider "seems to only be able to 'get going' when he can construct the required movement as orientated toward a habitual task such as shooing a mosquito or blowing his nose" (2010, p. 93). Merleau-Ponty outlines these kinds of actions as being concrete in their task orientation. They are the kinds of actions we habitually do without consideration, like riding a bicycle or walking. They are given in the sense that they are already familiar to the particular body-subject to the extent that they are akin to autonomic. As Merleau-Ponty notes, "the patient executes the movements that are necessary for life with extraordinary speed and confidence, provided they are habitual movements" (2012, p. 105).

Yet, the patient cannot mobilise his body when commanded to perform abstract movements like pointing to his nose; this, Merleau-Ponty argues, is because Schneider is unable to project a situation for himself in the manner required for the smooth performance of abstract movement (2012, pp. 112-114). The task is bodily unacquainted because it lacks an actual physical space and context to ground its significance. Or, put another way, Lymer states, "there is no 'sign' to spark a habitual response, like a mosquito. Schneider is required to imagine the sign and cannot do this" (2010, p. 93).

As should be clear by now, Merleau-Ponty claims that Schneider's pathology is encompassed within the domain of act intentionality, while his operative intentionality, the pre-reflective substratum of situated and habitual bodily movements has remained functioning. The patient's pathology lays in his incapability to project or "throw out [his]… own background" (2012, p. 114). The point Merleau-Ponty is making is that, in normal cases of abstract movement, one is able to project a space before themselves that "may take on a semblance of existence" (Ibid.). In other words, for abstract movement to be possible, one needs to be capable of abstract thought, of creating an "imaginary situation as a sign into which the body will be intentionally drawn and it is this creative capacity that is distorted in the patient with psychic blindness" (Lymer, 2010, p. 94).

Lymer also notes that this interpretation explains something that most of us might have experienced in certain circumstances when our capacities for abstract thought become situationally or momentarily hindered, often accompanied by high levels of emotion. What is more, my ability to project my intentional arc outward as a *sens* of 'I can' also becomes hindered. She clarifies:

> The inability to physically move when one is anxious or just not sure what to do is an experience often depicted in literature, especially in horror films or thrillers. The scene is one of a character frantic but stationary, perhaps looking for a way to escape an approaching attack by something very scary but unable to think straight. In not knowing what to do, one is unable to abstractly project a situation into which their body will be intentionally drawn. Movement becomes difficult or impossible because one cannot 'throw out' an intentional arc. They become frozen to the spot by fear (Ibid.).

In everyday existence, we bring this range of affective habits, "a schema [[typique]] of every possible being, or a universal arrangement with regard to the world ", to bear our perception and understandings of the world—as the 'I can' or 'I can't'—as an extended or contracted intentional arc in an encountered worldly situation (Merleau-Ponty, 2012, p. 453). In this way, the prereflective sphere of operative intentionality and one's intentional arc display a general structure with which to encounter the world. The way in which the world is encountered through these structures alters the signs, and thus the significance produced. Thus, as Merleau-Ponty claims, "habit resides neither in thought nor in the objective body, but rather in the body as the mediator of a world" (2012, p. 145).

As we have seen, the general term for this general bodily prereflective structure that exhibits an operative intentionality is the body schema; we will explore this in greater detail in the next section. From this we will see that if we are to understand the development of the robust passive synthesis or operative intentionality that manifests in twin-twin social interaction we will need to appreciate the development of their respective body schemas.

**The Body Schema**

At its most basic, the body schema is a set of motor capacities that enables us to have a pre-reflective understanding of our bodily position, posture, and movements; thus, it operates "below the level of self-conscious intentionality" (Dolezal, 2017, p. 322). In other words, it enables us to move knowledgeably, effectively, and efficiently in our

environments without the need for perceptual monitoring. Hence, Lymer remarks, “the generic term for the way in which the body maintains integrative interrelationships between bodily sensations and affect, movement, and perception such that they can be prereflectively experienced” (2011, p. 27).

The body schema, according to Gallagher, can be contrasted with the body image, which he outlines as “a system of perceptions, attitudes, and beliefs pertaining to one's own body” (2006b, p. 24). Crudely, for him there is a separation between having a mental “image” of one’s own body and the prereflective performance of the body as a “schema”. The body schema cannot be an image of the body, as images are objects of awareness, and, as we have seen, the body schema constitutes the substratum that underpins and structures such awareness. Hence, Taylor Carman remarks: “The body schema is not a representation of the body, then, but our ability to anticipate and (literally) incorporate the world” (2008, p. 106). This capacity, also known as “habit”, is not objective knowledge or internal to the mind, rather for Merleau-Ponty, “it is the body that ‘understands’ in the acquisition of habit” (2012, p.145).

For example, Aristotle observed that if you forcibly cross your fingers around a small object, you will seem to feel two objects instead of one. “Aristotle’s illusion”, Merleau-Ponty remarks, “is primarily a disturbance of the body schema” (Ibid., pp. 211-212), for it is not just that your fingers are rarely in such an awkward position, but they cannot get themselves there by their own effort. Hence: “The synthesis of the object is thus accomplished […] through the synthesis of one’s own body” (Ibid.).

Our perception of objects is already structured by our body and its sense of its own possibilities. The body schema thus constitutes our pre-reflective familiarity with ourselves and the world we inhabit. As a result, Carman notes: “I am aware of my body via the world […] [and] I am aware of the world through the medium of my body” (Carman, 2008, pp. 106-107).

Merleau-Ponty outlines the body schema as the anterior condition of the possibility for perception. He calls the body schema a dynamic form, a being-in-the-world, of which we have a “tacit understanding”. My body is not a superfluous container or instrument of my agency, but comprises “stable organs and preestablished circuits” (Merleau-Ponty, 2012, p. 100) that operate according to their own logic, as it were, below the threshold of self-conscious intention, or, as we have a seen, as an operative

intentionality. The body schema involves a set of tacit performances, preconscious, subpersonal processes that play a dynamic role in governing posture and movement. In most instances, movement and the maintenance of posture are accomplished by the (at least somewhat) automatic performances of the body schema.

Motor action is often part of a voluntary intentional project. When I jump to catch a ball in a game of hurling, or when I make my way across the street to shake someone's hand, my movements may be explicitly willed, "but my attention, and even my complete awareness in such cases, is centred on the ball or on the other person, and not on the precise accomplishment of locomotion" (Gallagher, 2007a, p. 275). In cases like these, our body moves effortlessly and in a co-ordinated fashion due to the functioning of the body schema, and not due to an image that we have of it. Thus, as we have seen, the body schema contributes to and supports intentional action (Gallagher and Meltzoff, 1996).

What is more, the body schema not only regulates and controls the body's posture and motility, but also how the body interacts with the objects and environment that constitute its immediate milieu. To illustrate this point, Merleau-Ponty gives the example of a blind man who uses a cane to aid in his manoeuvring around the physical world. After a while, the blind man uses the cane as though it were an extension of his own body. His body schema envelops the cane, thus it has "ceased to be an object for him, and is no longer perceived for itself; its point has become an area of sensitivity, extending the scope and active radius of touch, and providing a parallel to sight" (2012, p. 165). Hence:

> To get used to a hat, a car or a stick is to be transplanted into them, or conversely, to incorporate them into the bulk of our own body. Habit expresses our power of dilating our being-in-the-world, or changing our existence by appropriating fresh instruments (Ibid., p. 166)

Hence, the functionality of the body schema and its ability to incorporate worldly objects and tools is fundamental to operative or bodily intentionality. Dolezal notes that via "acquiring habit and skill, and accommodating objects in the lived environment, the body schema is constantly rearranging itself in order to facilitate the experience of smooth motor intentionally prefigured actions" (2017, p. 322).

It was noted earlier in the chapter that one important reason to examine Merleau-Ponty's phenomenology was because he pays particular attention to Husserl's notion of passive synthesis or operative intentionality. Indeed, we have seen that Merleau-Ponty offers rich resources for examining this kind of intentionality. I also claimed that his work would be useful for anchoring our own study of the ontogenesis of intersubjectivity in twins, because Merleau-Ponty undertakes a similar task with regards to the development of single-born children. For Merleau-Ponty, what is central to our mature capacities for self-consciousness, perception, and social interaction, is the development of the body schema, and therefore one of his major tasks is to trace its development. As noted earlier, operative intentionality is the *modus operandi* of the pre-reflective substrata or body schema, therefore, we can now more clearly see that studying his ontogenesis of the body schema will offer rich resources for examining the more robust passive synthesis or operative intentionality we find in the cases of twin-twin social interaction as outlined throughout this project.

According to Merleau-Ponty, the body schema is continually in a process of being renewed and rearranged via what he calls a "sedimentation" of tacit skills and techniques that make regular and repeatable intentional action possible. He notes that the process of renewal and rearrangement that makes habitual action possible is evident in cases of infant imitation. He further points out that when in the presence of a fifteen-month-old infant, if one puts their fingers between their teeth and pretends to bite, then the infant will open its mouth, and yet, he remarks, "[the infant] has hardly looked at his face in a mirror, and his teeth do not resemble mine" (Merleau-Ponty, 2012, p. 326). In other words, in this case, there is no immediate visual similarity between the infant's own felt but unseen mouth and the seen mouth of the adult. To account for this, Merleau-Ponty argues that the infant can cross the gap between the visual appearance of the other's body and the proprioceptive appearance of its own body because, as an embodied subject, it has an exteriority that encompasses an anticipation of the other. As he says,

> His own mouth and teeth such as he senses them from within are immediately for him the instruments for biting, and my jaw such as he sees it from the outside is for him immediately capable of the same intentions. 'Biting' immediately has an intersubjective signification for him. He perceives his intentions in his body, perceives my body with his own, and thereby perceives my intentions in his body (Ibid., p. 368)

This does not require an analogy of body images or visual representations between the infant's unseen mouth and the seen mouth of the adult they encounter; rather, the infant's body schema is characterised by a trans-modal openness that instantaneously allows it to comprehend and imitate others (Zahavi, 2001, 2005). Put another way, Merleau-Ponty is claiming that although the infant lacks a visual image of his own jaw, "when presented with intentional action, he senses from within a power for similar movement and gears into the intentionality of the gesture through mimicry [imitation]" (Dolezal, 2017, p. 321). There is what he calls a coupling, or pairing, between the infant and the adult that is reciprocal and transformative. It is precisely in this way that intercorporeal relations with others, understood as an ongoing intertwining between bodies, or "transfer" of movements and gestures and body "bits and pieces", builds one's body schema, and ultimately the capacity for meaningful action and engagement (Ibid. p. 322). Lymer notes:

> When this process of bodily habituation has reached a certain quantum amount which allows the child movement without needing to concentrate upon the movement itself, we can say that the child has taken possession of her body as her own. This experience of bodily ownership is, for Merleau-Ponty, subjectivity. The emergence of subjectivity is thus embodied. The body schema forms the substrate from which the child can then direct their perception out into the world while being simultaneously grounded by their bodies within a perspective (2011, p. 128).

The successful acquisition of the body schema, then, is crucial, as an infant's transition from experiencing their body as indistinct from others to developing the capability for a distinct self-consciousness, manifests though self-objectification, and this is mediated through the body schema, which is formed piecemeal through encounters with others.

Preceding to the emergence of the body schema, Merleau-Ponty outlines the infant's life as syncretic, as one where "there is not one individual over against another but rather an anonymous collectivity, an undifferentiated group life" (1964, p. 119). For him, the trajectory of infant development unfolds in the following way:

> There is a first phase, which we call pre-communication, in which there is not one individual over against another but rather an anonymous collectivity, an undifferentiated group life [[vie à plusieurs]]. Next, on the basis of this initial community, both by the objectification of one's own body and the constitution of the other in his difference, there occurs a segregation, a distinction of individuals—a process which, moreover, as we shall see, is never completely finished (Ibid.)

Like many of his contemporaries then, Merleau-Ponty thought that an infant required interaction within a social environment in order to develop self-experience (Ibid.). However, where Merleau-Ponty diverges from these theorists is in the claim that subjectivity develops as an alterity or divergence from others rather than through learning to socialise with others. For Merleau-Ponty, we begin life enmeshed with others and must discover our 'selves' as something separate (Lymer, 2010, 2011).

Merleau-Ponty further makes the point that syncretic sociability is essentially intercommunal, and the infant's original confusion results from experiencing the "intentions" and "affect" of others as a "chaotic maelstrom". The transition required for the child to experience their body as indistinct from others to that of the self-objectification required for self-consciousness, is facilitated via the continually developing body schema. Hence, prior to the development of the body schema in the early syncretic stage the original sense that the infant will have of themselves is what Merleau-Ponty calls the phenomenal body. Lymer clarifies:

> This embodied phenomenal self is not self-conscious. Rather the child's contact with the world is only grasped as momentarily experiential; it is the body as lived, the manner in which the body is orientated within the environment; the body minus the coordination and coherence that the body schema provides (2011, p. 128).

For Merleau-Ponty, the body schema emerges as the infant starts to structure their behaviour into habituated patterns of movement and adjustments that allow them to maintain what Lymer terms "homoeostatic equilibrium" within their world. Therefore, it is the continual development of the body schema that affords the child an increasing capacity to possess "a perception of [their] […] body's position in relation to the vertical, the horizontal, and certain other axes of important co-ordinates of its environment" (Merleau-Ponty, 1964a, p. 117).

Via the phenomenal body, the child explores the world by testing their ability to interact. Through the push and pull of the child's bodily interactions within particular situations and contexts, "certain patterns of behaviour will begin to emerge as practical ways of engaging in and with certain 'signs' that will elicit particular habitual behaviours within the environment" (Lymer 2011, p. 128). It is these habituations, according to Merleau-Ponty, that steadily form the basis for our body schematic functioning and thus our self- awareness.

Yet, as we shall see over the remainder of this chapter, there is both empirical and phenomenological evidence to refute the claim that both the early infant and pre-infant lack a functioning body schema. Moreover, it will be argued that Merleau-Ponty and others have failed to take into consideration how having a twin may affect the development of one's body schema and therefore operative intentionality. However, rather than discard his syncretic stage of sociability, we will see that this ends earlier than Merleau-Ponty initially thought, namely, when the foetus develops a functioning body schema in gestation.

**The Foetal Body Schema**

In this section, I outline two conceptions that have until recently dominated phenomenological accounts of pregnancy. We will also see that these are rooted in a presupposition that motivates Merleau-Ponty's own claims regarding child development, namely, that the new-born infant lacks a functioning body schema. However, as we will see, there is both phenomenological and empirical evidence that not only demonstrates that a neonate has a body schema, but so too, does the prenate.

These two conceptions of human generativity are outlined by Sara Heinämaa. First, she remarks that various thinkers argue that the experience of pregnancy, when analysed by phenomenological resources, undermines several distinctions that are central to Western philosophy, most significantly the self-other and own-alien distinctions (Heinämaa, 2014, p. 31). This line of thought is exemplified by Iris Marion Young in her influential essay *Pregnant Embodiment: Subjectivity and Alienation*. Young (1990) outlines a woman's experience of carrying another within her own body as a de-centring, a splitting of the self; in pregnancy, she becomes doubled, herself but not herself. As she notes:

> Reflection on the experience of pregnancy reveals a body subjectivity that is decentered, myself in the mode of not being myself […] The first movements of the fetus produce the sense of the splitting subject; the fetus's movements are wholly mine, completely within me, conditioning my experience and space. Only I have access to these movements from their origin, as it were. (Young, 1990, pp. 162–63, cited in, Ibid., p. 34)

Heinämaa also points to another prevailing argument that is connected with the notion mentioned above. Its central claim is that natural birth is the event that enables the original experiential distinction between self and other. She notes, on this conception, "the mother-foetus relation would not involve any relations between two corporeal

selves; all such relations would be postnatal" (Ibid., p. 31).[13] In other words, pregnancy can be understood as a nondistinction or self-other fusion between the mother and foetus.

This kind of conceptualisation of a singleton pregnancy has helped to shape phenomenological descriptions of twin pregnancy too. For example, Jeanne Van der Zalm, following Young, claims that in twin pregnancy, a woman's "sense of being" changes in noticeably different ways from that of someone who is expecting a singleton. This is because: "Carrying two other beings within her body, 'her self' is split into three rather than two" (1999, p. 103). On this view, a twin pregnancy is not a triadic relation between three corporeal selves but rather a tripartite splitting of the mother's self.

Indeed, in the case of twins, this notion of nondistinction seems to continue post-partum. As we have seen in chapter 1, there is a wide range of literature that outlines twinship in such a manner. For example, Leonard claims that in the first few weeks of their development, a neonate twin, to the extent that they are aware of the other, "experiences a sense of oneness (as opposed to separation) which results in a state of 'psychological syncytium', a condition which precedes an awareness of body boundaries" (1961, p. 307). Indeed, the notion of cohesion that characterises accounts of twins can also be found in neonate accounts of single-born development. As we have seen, for Merleau-Ponty, we begin life after birth, in cohesion with others and our environment; a state that he terms syncretic sociality.

It would seem, then, thinkers like Young and Van der Zalm share Merleau-Ponty's assumption that the infant or pre-infant lacks a sense of self-unification through the familiarity that the habitual body provides, a unification which enables a distinction between self and other—in short, a functioning body schema. However, as we will shortly see, recent work carried out by Heinämaa, Dolezal and Lymer would refute such claims.

If we contextualise this in terms of the example of the neonate twins provided above, we could say that Merleau-Ponty would claim they experience a sense of oneness and indistinction that precedes "bodily boundaries" precisely because they lack an operational body schema. For him, it is only, "after six months", when the infant will

[13] According to Heinämaa examples of persons who defend this notion are Christine Schües (1997, 2000) and Johanna Oksala (2003).

begin “the development of [a] perception of one's own body” or body schema (Merleau-Ponty, 1964, p. 125).

Yet, there is empirical evidence to suggest that infants younger than six months are capable of the kind of intercorporeal constitution described in the last section. More precisely, a series of experiments conducted by Meltzoff and Moore (1977, 1983, 1997) demonstrate that neonates between seven and seventy-two hours old are capable of facial mimicry. What is more, later experiments show newborns are also able to engage, respond to, and initiate interpersonal embodied exchanges, such as hand gestures and facial expressions. It is on this basis, that Gallagher and Meltzoff contest the earlier conclusions of Merleau-Ponty. Instead, they claim there is perception and the possibility of collaboration from “the very beginning”, precisely because what Merleau-Ponty recognises as the condition of the possibility for the perception, namely, an innate body schema, is functioning from the very “beginning”, or birth (1996, p. 227). Therefore, in their view, an experiential connection between self and other is in operation from birth, “and is not, as Merleau-Ponty contends, a syncretic confusion” (Ibid., p. 229). Hence, for the neonate, there is at the very least, “a rudimentary differentiation between self and non-self, so that one's earliest experiences include a sense of self and of others” (Ibid.).

Gallagher and Meltzoff’s claims regarding an innate body schema that seems to negate the possibility of a syncretic stage of development may be too strong. We will shortly see in detail that Lymer, while in agreement with the notion that the neonate is born with a functioning body schema, would be reluctant to endorse that it is innate. Rather, the infant’s body schema is formed during pregnancy through an imprinting of the maternal body schema, and this requires syncretism to be realised. In short, the infant’s body schema is of maternal origin rather than being innate or of foetal origin. Hence, it is not that we should disregard Merleau-Ponty’s account of ‘syncretic sociality’ but rather reformulate his developmental milestones so that they begin in gestation rather than after birth.

Nonetheless, the idea that an infant is born with a functioning body schema would seem to directly contradict the claims regarding the newborn twins above, that is, on this view, rather than there being a sense of oneness that precedes bodily boundaries, there would instead at least be a rudimentary distinction between self and other because, as

Krueger notes, “infant’s capacity for visual imitation seems to suggest that they possess at least a rudimentary sense of embodied ecological or situated selfhood” (2013, p. 517)

It also raises an interesting question for our study of intersubjectivity in twins, namely, if a neonate has a functioning body schema from birth, is it the case that twins have a functioning body schema in gestation? And, if so, is it this that forms the basis for the robust passive synthesis or more developed operative intentionality that seems to enable the exceptional intersubjective capacities we find in cases of twin-twin social interaction post-partum? I will answer both in the affirmative.

Thinkers like Heinämaa and Dolezal would certainly seem to think that the body schema is operative in the prenatal environment. They demonstrate this by challenging previous accounts of human generativity, which describe the relation between the mother and foetus in pregnancy as a nondistinction, or a fusion of self and other. Heinämaa remarks: “The correct description of pregnancy should not include oxymoronic or contradictory formulations, for instance, ‘self and not self’, but should capture a particular temporal process of bodily transformation and re-formation” (2014, p. 38).

For them, the body schema is significant in two regards. First, the temporal process of bodily transformation and re-formation, noted by Heinämaa above, occurs because of the malleability of the body schema; more precisely, it enables the pregnant woman to regulate her ever changing body in order to integrate the pre-infant developing within her. Indeed, in twin pregnancy, the body schema is more frequently having to adjust to the mother’s rapidly changing body, as one woman notes, “all of a sudden I couldn't bend over to do up my shoes or I'd look in the mirror and go 'man I've grown in the last two weeks'” (Van der Zalm, 1999, p. 99). This is because at four to five months, the belly of a mother of twins is around the size of the belly of a singleton pregnancy that is at eight to nine months (Piontelli, 2002). Hence, in a manner like the way in which the blind man incorporates his cane—an external entity—the maternal body schema incorporates an internal entity—the foetus(es). The body schema rearranges itself as the mother’s body transforms, so that she can participate in the world without having to rely constantly on explicit cognitive processes.

One thing of interest about singleton pregnancy, Dolezal notes, is that despite the foetus being inside of the mother's body, "and wholly inseparable from it, there is a palpable sense of the foetus being separate; it does not have the same phenomenology of an internal organ" (2017, p. 323). So, on the one hand, while the flexibility of the body schema provides the woman with a temporally extended sense of unity and bodily coherence, there is, at the same time, an inner sense of other, "a palpable sense of something 'other' that ultimately cannot be assimilated into oneself" (Ibid.). As a result, the foetus as experienced via touch-sensations, kinaesthetic sensations, and especially through movements, would seem to constitute its own body, which is "somehow independent (while simultaneously wholly dependent and inseparable) from its gestational mother" (Ibid.). It is on this point that Heinämaa wishes to contest the claims made by Young. As noted above, Young describes foetal movements as belonging to another being, "yet they are not other," hence, "the pregnant mother cannot make any distinction between herself and the other, between what is her own and what belongs to the infant" (Young, 1990, pp. 162–63, cited in, Heinämaa, 2014, p. 34). However, contra Young, Heinämaa argues that "gestation, as experienced by women who live it in the first person, includes a separation between two sensory-motor beings in a nesting relation: the pregnant self and the embryonic other" (Ibid., p. 32). Ultimately, Heinämaa puts forth the argument that pregnancy does not erode the self-other boundary or the own-alien boundary but re-establishes both these divisions. For her, the functions of, "the feminine body, as it is lived by women, are specific in that they prepare for an opening of an inner space, a space that houses another living sensing-moving being" (Ibid, p. 41). Dolezal is keen to denote the importance of this point, as the foetus is not merely experienced as a "foreign entity within the mother's body", but rather through its movements, such as kicking, turning, stretching, "it is experienced as a 'sensory-motor being', that is, a being with its own capacity for perception and meaningful movement. Or, in other words, a being with a body schema" (2017, p. 323).

If one examines accounts of twin pregnancy, they will see that this is also the case. In other words, through their movements, and particularly in interaction with one another in utero, twin foetuses are experienced as two sensory-motor beings. From around mid-gestation, explicit maternal perceptions start to play an ever-increasing part in the discrimination of differential foetal movements (Lerum, Major and LoBiondo-Wood, 1989). Some mothers can feel their twins kick or move separately, as there is space in

the uterus. The chances for this increase provided the babies are settled on different sides, or one below the other in a sandwich position:

> I have a twin each in her own amniotic sac, and the membrane dividing them goes from top to bottom right down the middle of my tummy, so Lettuce (nicknames till they arrive!) is always on the left, and Radish is always on the right. It's only really since twenty-five weeks that I've had regular movements, and ones that my partner could feel from the outside. Now at 27 weeks Radish kicks so much it hurts! She's actually bruised me! And she wriggles her whole body, it's the weirdest thing! Lettuce is growing more on me every day, she's so nice and quiet! Just gentle little flutters from her every so often, none of the belly shaking kicks that her sister gives me! I used to worry about Lettuce, because a day or two could easily pass without me feeling her, but she is growing just as well as her sister, and now I can feel her pretty much every day (Esther-Grace, 2011, np).

However, as crowding increases and the consequent spatial arrangements of the twins become even more complex, many mothers cannot tell which is which, but some report differences in the perceived movements of their twin foetuses (Piontelli, 2002). Hence, there is an equal possibility that mothers are not able to distinguish between their twins as they spend most of the time huddled together, and a set of 8 limbs (4 hands and 4 feet) are intertwined.

> I only ever felt movements on one side to start with and when I went for my scan, I realised it was because they were both laying on top of each other transverse on that side. I then started feeling it on both sides and my bump changed and the next scan showed that there was one on each side head down (KarenM10, 2011, np)

Women who are pregnant with two can discern movement within their bodies, can feel the quickening, but at the moment of quickening cannot discern which child is making the movements. It is the “babies” moving, not the individual baby.

> I can feel what they are doing all the time […] It's really neat when you can feel them really dramatically. They do things, like sometimes you can feel their foot or something and it doesn't move, and it's sticking right there and then you get a real dramatic movement somewhere else (Van der Zalm, 1999, p. 109)

Later in the pregnancy, however, ‘they” become “this baby” and “that baby”. “The one that's head is down further used to be the busy one and has really slowed down. I really think that Baby B is stronger" (Ibid.). As Piontelli notes, that maternal perceptions can in fact be very accurate, and even more so, when “serious matters are at stake. Alarm at

changes in the perceived movements can be tragically justified" (Piontelli, 2002, pp. 34-35).

The point is this: even though at points in the pregnancy the mother can find it difficult to distinguish whose movements belong to whom, she nevertheless experiences something that does not have the same phenomenology as an internal organ. This is because that 'something' is a pair of twin foetuses with separate body schemas from both their mother and each other. Hence, the notion of the tripling of the maternal self in twin pregnancy, as claimed by Van der Zalm, seems to fall flat in much the same manner as Young's claims do in the face of Heinämaa's criticisms. Namely, that the mother of twins does not experience a tripling of herself, but rather experiences a separation between herself as a sensory-motor being, and—even though at times her experience contains a degree of ambiguity in regard to distinguishing the movement of each foetus—two other sensory-motor beings. Hence, I concur with Heinämaa, and contend that we can understand a twin pregnancy not as a fusion between each twin and the mother but rather as a nesting relation between the pregnant self and two embryonic others.

Human generativity correctly understood this is "a primitive self-other relation of mutual awareness and reciprocal gesturing [that] is established prior to the birth of the infant", and hence, "the newborn baby is not an egoless tabula rasa" but rather, it "has a sensory-motor identity and a potential for communication" (Heinämaa, 2012, p. 34). As Dolezal notes:

> [A] phenomenological analysis of intercorporeality through pregnancy demonstrates that the constitution of the structures of subjectivity is not merely something that occurs through social and embodied relations *after* birth but has its origins in the process of gestation itself (2017, p. 325, authors italics).

The question, then, is not do twins have a body schema in utero, as one can easily demonstrate this if they examine recent phenomenological accounts of child development and pregnancy. Rather, it is, how does developing alongside another sensory-motor embryonic other in utero affect the development of each twin's body schema, and thus their mature potential for reciprocity and communication with each other?

I will argue that it significantly affects the development of each twin's body schema (particularly monozygotic twins), as not only are twins born affectively coupled to their mother, but also to one another. This will pave the way for describing how a robust passive synthesis or operative intentionality presents in twinship, because it will become clear that twins follow a developmental trajectory that enables intersubjective capacities that we all possess—to a greater or lesser extent—to manifest more intensely in their social interactions. We will further explore this in the next chapter and in the subsequent sections of the present chapter, however, before this, it will be useful to understand how the body schema develops in gestation for a singleton foetus.

**Foetal Body Schematic Development in Singletons**

As we have seen, there is plenty of literature that demonstrates that infants have an operational body schema far earlier than Merleau-Ponty thought, namely, from birth. What is more, recent literature on the phenomenology of pregnancy indicates that the body schema is also functional for the pre-infant. Understanding the development of the body schema in utero is a central concern for Lymer.

In general, she is sympathetic with Merleau-Ponty's account, however, as she claims, "it will be my argument that [his] theory of infant development requires modification especially in regard to how he understands the timing of the developmental stages" (2010, p. 111). This claim is based on two major issues with Merleau-Ponty's account of the development of the body schema. First, citing the evidence on infant imitation from Meltzoff and Moore that we have discussed above, she claims his understanding of infant life as chaotically syncretic is strongly challenged by the evidence that shows that new-borns can imitate adults when they are just a few hours old. She remarks, "should a newborn infant be capable of imitating adult actions, then it would seem unlikely that body schematic development in the neonate is as primitive as Merleau-Ponty suggests" (2011, p. 132). In short, as we have seen already, the evidence from these studies indicates that the body schema develops in utero.

Drawing on the work of a number of critics of Merleau-Ponty, she outlines the second issue:

> While for him the infant experiences affect intersubjectively, this affective syncretism is too chaotic to provide any guiding sense to the infant. For Merleau-Ponty the role of affect within the process of differentiation required

> for subject development is an unstructured maelstrom and so cannot offer any meaningful information to the child (Ibid., p. 134).

However, as she rightly demonstrates, such a position is in direct opposition to research into infant bonding and attachment such as that pioneered by Bowlby (1969), and Klaus and Kennell (1979,1981,1983,1998), who argue that bonding is an affectively structured relation that is a necessary condition for the healthy development of infant subjectivity—in her view—this proves problematic for Merleau-Ponty's understanding of affect as chaotic.

For her, his theory is too reliant on the role that vision plays in the development of the body schema. To show why, she draws on the work of Dorothea Olkowski (2006) who argues that if it is the case that the child is born into a syncretism—which is an unstructured maelstrom—then vision alone is not sufficient to introduce differentiation between the affective syncretism of infant and the adult. Olkowski thinks this for two reasons: (1) without a tactile felt separateness, vision alone does not guarantee that what is seen is understood as 'an other' or something separate from oneself. Why would a child see an adult as separate to her if she continues to share affective experience with that adult? What developmentally clarifying role is vision actually performing, and how could it be sufficient to begin to limit the affective experience of the child to itself? (2) By Merleau-Ponty's own account, vision is alienation in that it is either knowledge of oneself for the child who has gained the developmental stage of mirror self-reflection, or not knowledge of herself at all for the child who has not. So, "Caught up in this image" without any other alternative, "the child is alienated from herself, from the world, and from others to the point where intersubjectivity *becomes* alienation" (Olkowski 2006, p. 10, cited in, Lymer, 2011, p. 135)

Lymer then turns to Claude Lefort's (1990) criticisms of Merleau-Ponty, to show that his account explicitly lacks someone who acts as mediator for the infant's development of self-consciousness. Lefort articulates this ambiguity as a conceptual tension between the notions of *reversibility* and *alterity.* Lymer clarifies:

> For the infant, the other is not originally an *alter ego* such that the perspective of the infant is reversible with that of the adult. Between the infant – and this is especially the case visually – and things in the world, is a *mediator* who names the child, the things, and the world; who introduces the child to his or her world. In doing so, the mediator forms or structures the child's conceptual world through linguistic representation. Therefore, Lefort argues, vision cannot be the

> original openness to the development of subjectivity because the relationship requires mediation by a third person. This third person mediator, who is originally the birth mother but may not remain so, is the fulcrum of representation that *is* the child's world (Ibid., authors italics).

In short, the mediator is the one who triangulates "the relationship between the child and the world and therefore their role in the infant's development cannot be ignored" (Ibid.).

Lymer claims that these criticisms leave open the question of how the fifteen-month-old infant noted above comes to have the capacity to compare the body felt with the body seen. She notes:

> Although Merleau-Ponty acknowledges that we respond to stimuli that the world presents to us without the requirement of reflexivity, and he acknowledges that for the child vision is insignificant in comparison to what is felt, he nonetheless, as Olkowski and Lefort separately identify, overlooks the conclusion that for the child, the world and others might therefore be given through a mediator who guides and structures the child's experience (Ibid.).

In other words, both of the thinkers discussed by Lymer demonstrate how the absence of a pre-existing relationship between mother and child in Merleau-Ponty's account indicate a major shortcoming. Namely, if we are not affectively bonded with a mediator then it is difficult to explain how vision alone permits the infant to develop the capacities that enable it to move from a state of chaotic syncretism to the degree of alterity required for self-recognition and subjectivity formation.

Yet, for Lymer, these issues do not amount to fatal flaws in Merleau-Ponty's account. Instead, she is keen to make the necessary modifications that will retain the integrity and significant insights offered in his work. She addresses these by showing how the cohesion Merleau-Ponty describes as a "developmental stage begins *in utero* and not with 'others' but, with a mother". For her, "it is this affectively structured embodied relation that guides the foetus, and possibly then the child, through the early stages of subjectivity development" (Ibid., authors italics). Lymer claims that initially the foetal body schema develops through a developmental imprinting with the maternal body schema; and later in gestation, when the body schema is functioning, a coupling between maternal body schema and the foetal body schema will form an affective bond, which is crucial to individual subjectivity development.

In her view, the earliest stages of gestation can be understood as a syncretism in a Merleau-Pontian sense. However, the pre-infant's body schema is not initially developed via vision but rather by the habituated movement patterns of the mother which underpin, structure and regulate early movements by repeatedly moving the foetus in certain ways by her body moving in certain ways. In other words, as we have seen above, the maternal body schema incorporates the foetus in much the same way that she incorporates an external entity, and in so doing:

> [R]eflexes and proprioceptive structures will thus form as a kind of imprinting from this proprioceptive-like movement and as such, will be 'modelled' upon the mother's particular movement patterns. What this means is that foetal structure is born out of maternal body schema structuration and so will, from its very beginnings, emerge as an adaptive style of movement with his or her mother (Ibid., pp. 137-138).

This, as we will see shortly, challenges claims found in embryology research. As Lymer remarks, "very early foetal movement is regulated or 'practiced' in a manner which is not initially of foetal origin" (Ibid., p. 137).

Lymer is also keen to stress that while physical maternal movement no doubt plays an important role in the process, it should also be noted that "the regular maternal heartbeat, breathing and digestion which together construct an intrauterine world that is not only moving but also rhythmic, regulated, and animate" (Ibid., p. 138). Another factor that aids foetal development of the body schema in these early stages is the size of the foetus in relation to the size of the amniotic sac and to the amount of amniotic fluid surrounding the foetus. As she notes:

> Overall, the situation of a 10-week-old foetus within a fluid-filled womb within a moving body amidst rhythmic beatings and breathing would facilitate a continuously moving, flowingly rhythmic world. The growing buoyant weight of the foetus at this early stage would precipitate the rolling and rocking movements that are fundamental to develop capacities for basic homoeostatic bodily positioning such as upright and sideways (Ibid.).

Lymer contends that this notion of "proprioceptive development as being situated and maternally facilitated is consistent with Merleau-Ponty's account" (Ibid.). That is, "habitual behaviours are those that we have formed in relationships with meaningful contexts and the engagement within that context is likely to elicit a similar behaviour at a bodily, non-conscious level" (Ibid.).

In essence, Lymer is describing the syncretic stages of the pre-infant's development. During this phase, the foetus can be considered much more a part of the maternal body, rather than something that is divergent or independent from it. A reciprocal relation is required in order to allow for a communication to form between mother and foetus, thus the foetus must be—in some rudimentary way—a separate being from the mother before one could hypothesise a 'relationship' between both entities. She points out that for this we must wait until late in the second trimester, where recent empirical literature from Zoia et al. (2007) suggests that foetal habituation and learning are indicative "of an increase in foetal independence and suggestive of a foetal environment that begins to extend beyond maternal mediation in the gross physical manner of the first trimester" (Lymer, 2011, p. 138). She clarifies:

> Kinematic patterns within foetal movement consistent with intentional goal directed bodily action emerge around 22 week's gestation; actions that were previously only broadly directional up to 18 weeks. By 22 weeks, hand reaches become straighter and more accurately aimed with acceleration and deceleration phases of the movement predicated on the size and sensitivity of the target (Ibid.).

However, Lymer is keen to distance herself from some of the claims made in the study carried out by Zoia and colleagues—she points out that they indicate in their findings that 22-week-old foetuses display an unexpected degree of what they call action planning. However, Lymer wants to restrict their claims to one of intentional action. As she notes, "I make the division so as not to confuse a habituated and practiced intentional bodily action with the suggestion that these movements require a kind of mental 'planning'" (2010, p. 247).

Thus, we can see that Merleau-Ponty's distinction between operative intentionality and act intentionality is important here, as a foetus does not possess the latter. Yet, what we see emerging by the end of the second trimester, according to Lymer, is the beginnings of the intentional arc, or more precisely, operative intentionality. Throughout the first trimester, much foetal behaviour can be explained in terms of a reflex, but by the end of the second trimester, we see repeated intentional behaviour patterns that build or improve upon each other (Lymer, 2010). Thus, the movements outlined by Zoia and colleagues are "highly suggestive of independent action as their strength and trajectories are no longer maternally directed but rather cut across or in other words, go against, the flow of maternal movement" (Lymer, 2011, p. 138). Lymer remarks that this intentional action also suggests that the foetus has developed by 22 weeks, "a sense of ipseity; a

sense of self and non-self that is displaying sufficient consistency that the foetus can discern something as experientially not him or her" (Ibid.).

Lymer also notes that as foetal action is much more deliberate and forceful, it will also be a "factor in the level and response of the maternal sensation of movement both consciously and within her body schema" (Ibid.). Therefore, the mark of 22 weeks of foetal development also signifies the start of a different kind of maternal-foetal *engagement*. At this point, the relationship becomes interactive, one of *reciprocity*, or a *communication,* which is based on maternal engagement with intentional foetal movement. This leads her to claim that:

> This developmental trajectory is consistent with Merleau-Ponty's notion of body schematic intentionality as not requiring self-consciousness beyond the ipseitic, or self and non-self […] Recall that consciousness for Merleau-Ponty originates *through* the body in the form of prereflective consciousness as the familiarity that I have with myself as I engage in the world. What the maternal-foetal relation provides and structures for the foetus is just this engagement (Ibid.).

In short, the whole process both requires the presence of, and is facilitated through, the maternal body schema. Hence, Dolezal endorsing Lymer claims that "this 'support-system of maternal tissues' is not merely a passive receptacle that simply contains a developing fetus, but rather is a communicative and constitutive medium" (2017, p. 324). Lymer demonstrates how the negotiated and choreographed movement patterns of the mother are not just necessary for the transformation and rearrangement of her own body schema, but also to the development of the foetal body schema. Toward the end of the second trimester, the formation of the foetal body schema results in the emergence of a pre-reflective consciousness in the form of operative intentionality, which will in turn allow for an affective coupling or mutual reciprocal or interactive bonded relationship between mother and foetus to form. Lymer notes that understanding this process of affective coupling or bonding is vital, as it is just this "kinetic melody" that will guide the subjective development of the pre-infant and possibly the child.

We will now consider what has been discussed in cases of human generativity concerning twin foetuses. I will argue that body schema formation is accelerated due to inter-twin contact that is originally underpinned and facilitated by the transformation of the maternal body schema. Once the foetal body schema is formed, twins undergo a body schematic coupling with both the maternal body schema and the foetal body schema of the co-twin,

or an interactive mutual influencing of body schemas. However, it is important to note that the coupling that occurs between the foetal body schemas of each twin continues to be underpinned by the mature body schema of the gestational mother.

When born, neonate twins are both bonded with the mother—which primes them for affective intersubjective relations with older children and adults post-partum—and with their twin—which primes them for post-partum affective intersubjective relations with each other. Taken altogether, this information demonstrates that from early in gestation, the developmental trajectory of twins differs significantly from their single-born counterparts.

It follows that operative intentionality, the *modus operandi* of the body schema, develops differently in twins, therefore pointing to and supporting my earlier claim that the exceptional intersubjective capacities we find in twin-twin social interaction are enabled by the development of a robust passive synthesis or a novel operative intentionality.

**Foetal Body Schematic Development in Twins**

Lymer offers a sophisticated and persuasive account of how through the development of the body schema in utero, the infant is already from birth affectively bonded to the mother and thus primed for adult guidance in their post-partum development. However, while she mentions twins at several points throughout her work, she fails to acknowledge the significance of how developing alongside another in utero may affect the development of the body schema and thus pre-reflective consciousness or operative intentionality. Likewise, Merleau-Ponty also seems to overlook the significance of having a twin in his work.

Thus, it will be my aim here to articulate how this process differs in twin pregnancy. I will claim that because of the particular circumstances of their gestation, twins are not only affectively bonded or coupled to their mother, but also to one another, and this, as we will see, has a significant impact on the development of their intersubjective capacities.

In my MA thesis I endorsed Gallagher and Meltzoff's (1996) claim that the body schema is innate, however, as we shall see, the notion that the body schema is innate runs into problems when we try to comprehend its development in terms of foetal interaction between twins in utero.

Interaction between twin foetuses has been noted as early as 9 weeks of gestation, however, this is a rare occurrence. In general, observations of intra-pair movement begin between 10 and 11 weeks in monochronic pregnancies, and from 13 weeks onward in diachronic pregnancies (Arabin et al., 1996; Piontelli et al., 1997, 1999; Piontelli, 2002; Sasaki et al., 2009). Piontelli et al. notes this temporal difference is "due to greater spatial contiguity and thinness of the membrane dividing the two amniotic sacs in [different] pregnancies" (1997, p. 39). Following the logic of Gallagher and Meltzoff (1996), I previously contended these initial interactions were made possible by an innate "socio-biological system" or body schema, which must be initiated by the reflexive or non-intentional movement of each pre-infant, and in turn, precipitates further development of this system (Hoctor, 2015). In other words, movement and therefore interaction between twins in utero is of foetal origin.

However, as touched upon above, Lymer would contest such claims. Her argument is defended on the basis of concerns she raises against two recent developments in embryology research. The first claim regards the presence of a body (motor) schema due to evidence of habituated movement in 9-week-old foetuses. She notes:

> [T]his is curious because the required structures (the cortex, proprioception, perception) for body or motor schematic functioning are not formed within a foetus prior to around the 15th week of gestation, and even then cortical activity is minimal and intermittent [...] a reflexive movement pattern may, logically be spontaneous and may be reliably repetitive should the presented stimulation be consistent and of equal intensity, but they are hardly regulated and one does not 'practice' reflexes" (Lymer, 2011, p. 136).

The second has to do with the "movement influences morphology" thesis, which basically argues that "bodily movement precedes and is necessary for, the nervous system development relevant to that function" (Ibid.). Lymer does not take issue with this hypothesis *per se,* but rather what is needed to get it off the ground. More precisely, her problem is with those who claim that very early foetal movement is "regulated by the initial emergence of the more primitive reflex structures which move in coordinated response to stimulation which then precipitate the development of further bodily anatomy and physiology" (Sheets-Johnstone, 1999, cited in, Ibid.). Interestingly, this is a very similar claim to the argument I previously defended in my MA thesis. In other words, foetal interaction in twin pregnancy is presupposed by a body schema and is initiated by reflexes or non-intentional movements between each foetus (Hoctor, 2015).

However, Lymer correctly asks, how do these reflexes originally develop? She puts forward the idea "that reflexes biologically unfold and develop to influence subsequent morphology is inconsistent because reflexes also have morphology and pathologies" (Lymer, 2011, p. 137). Therefore, in her view, "we might expect that any account of movement development as *a priori* should in some way encompass reflex development as well, rather than taking reflex *existence* as a starting point" (Ibid., authors italics).

In short, her arguments against these claims are that (i) the neurological evidence does not support the existence of an innate body schema, and (ii) the argument that primitive reflexes influence morphology seems to constitute a kind of circular reasoning. Therefore, it would seem, claiming that early foetal interaction between twins in utero has its origins in the body schema of each foetus is a non-runner, because they are too neurologically immature to have such a schema, and explaining it in terms of primitive reflex structures seems to be underpinned by a logical fallacy.

Instead, as we have explored in detail, "the more logical claim is that, what is providing the structuring and the basis for a movement appearing to be regulated and practiced is the maternal body schema" (Ibid.). In other words, early foetal interaction between twins has its origins in an "intrauterine world" that is "not only moving but also rhythmic, regulated and animate" (Ibid., 138). One could postulate that before inter-twin contact, the body schema of each twin foetus develops roughly along the same lines as their singleton counterparts; namely, within the mother's womb, each foetus exists in a fluid filled, breathing, beating animate world that continually moves and flows rhythmically. The proprioceptive-like movement of this intrauterine world then enables the development of the basic structures for proprioception and reflexes. These structures are the consequence of a sort of "imprinting" that is "modelled" upon the habitual movements of the maternal body schema. Therefore, foetal structure manifests through an "adaptive style of movement" that is guided by the structuration of the mother's body schema. Inter-twin contact is born out of this, rather than an innate foetal body schema.

In lay terms, due to the constitutive role of the maternal body schema, prior to contact, each twin has developed basic reflex structures that enable interaction between them. As the twins are initially in a state of syncretism, interaction continues to be underpinned, structured and regulated by the habituated movements of the mother that literally

stimulates contact by repeatedly moving both foetuses in certain ways. Thus, the impact of this process is twofold in twin foetuses, as along with enabling inter-twin contact, the rhythmic movements of the mother continue to provide a model for the development of each twin's own foetal body schema.

Arabin et al. remark, "the fact that twins experience more tactile stimuli than singletons might improve their development" (1996, p. 172). Put in context, this double impact may, in fact, enhance body schematic development in twin foetuses. Castiello et al. for instance, note that "whereas intertwin contact can be considered a rather exceptional event before the 10th week of gestation, the number of contacts between twins rapidly increases during the second semester" (2010, np). Sasaki et al. (2009) claim to have observed 10 different patterns of "inter-twin" contact as early as between 12 and 13 weeks. However, this does not necessarily indicate enhanced body schematic development, as Arabin et al. note, "the nature of motility has been reported" as rather "jerky" or non-intentional around 12 weeks (1996, p. 170).

Instead, it confirms that these early stages of inter-twin contact can still be characterised as a syncretism, and that they are facilitated by the habituations of the maternal body schema. However, later foetal interaction does seem to indicate an enhancement, as by 16 weeks, Arabin et al. (1996) state that contact becomes slow and harmonious. Piontelli et al. also note, "by 15 weeks gestational age intra-pair stimulation is a constant and up to 22 weeks an increasing feature of all twin gestations" (1997, p. 44). Most interestingly, Castiello (2010) et al., using kinematic profiling, claim that inter-pair contact at 14 and 18 weeks is the result of motor planning rather than an accidental outcome of spatial proximity.

As, we have seen above, in order to support her claim that the body schema develops in utero, Lymer draws on kinematic evidence from Zoia et al. (2007), which demonstrates intentional goal directed action in singleton foetuses at 22 weeks. Yet, according to Castiello et al. there is no evidence of this:

> [I]n 14- and 18-week old ones: up to the 18th week of gestation, reaching is rather inaccurate and there is no indication that the eye, the most delicate region of the body, is treated differently from the mouth. Here we found that in twins a differential kinematic pattern for movements performed towards the eye region and movements performed towards the mouth were already evident at the 14th week of gestation. At 14 as well as at 18 weeks, movement duration was longer

> and deceleration time was more prolonged for movements towards the eye compared to movements towards the mouth (2010, np)

This is relevant if we consider Merleau-Ponty's outline of how bodily self-exploration allows for both the development of our own subjectivity, as well as intersubjectivity, which is established as intercorporeality or an embodied relation with others.

As we have seen, for Merleau-Ponty subjectivity is an embodied relation to the world. For him, to be embodied is not to exist as a pure object or subject, rather, being embodied allows one to transcend both potentialities. In other words, I can both be subject and object for myself, hence, when I experience myself and when I experience others, there is, in fact, a common denominator and that is embodiment. As Zahavi points out, as intersubjectivity is, *ipso facto*, possible, then "there must exist a bridge between my self-acquaintance and my acquaintance with others; my experience of my own subjectivity must contain an anticipation of the other, must contain the seeds of alterity" (2001, p. 163). If one is able to recognise other bodies as incarnated external subjects, then one must have the capabilities to allow them to do so. For Merleau-Ponty, that which I and another have in common is embodiment, and one aspect of my embodiment as a being-in-the-world is its exteriority. Therefore, he remarks:

> If I do not learn within myself to recognize the junction of the *for-itself* and the *in-itself*, then none of these mechanisms that we call 'other bodies' will ever come to life; if I have no outside, then others have no inside. If I have an absolute consciousness of myself, then the plurality of consciousnesses is impossible (Merleau-Ponty, 2012, p. 391, authors italics).

Lymer notes, "bodily self-exploration for Merleau-Ponty is the way in which I experience and confront my own exteriority, while experiencing being touched" (2010, p. 240). This experience, this capability to doubly sense, is a vital precondition not just for individual subjectivity, but also for intersubjectivity "because I am experiencing myself in the way in which I would experience another and objects in the world" (Ibid.) Therefore, "how I perceive others as both subject and object, and how I perceive that they perceive me, begins with how I perceive *myself*" (Ibid., authors italics). This becomes salient if we consider what happens in the case of kinematic profiles of twin foetuses, Castiello et al. note:

> Whereas the proportion of self-directed movements decreased between the 14th and the 18th week of gestation […] other-directed movements showed a trend in the opposite direction, increasing over the interval considered (2010, np).

What we are observing in twin foetuses, then, seems to be precisely the kind of bodily-self exploration that facilitates a pre-reflective intentional embodied relation with the co-twin, or as we soon shall see, an affective body schematic coupling.

Lymer also utilises the kinematic evidence to argue that at 22 weeks of singleton foetal development, there is a change in the relation between the maternal-foetal engagement from a syncretism to one of reciprocity and communication, thus allowing for a coupling or accouplement between the gestational mother and the pre-infant. This happens, Merleau-Ponty notes, when "I [perceive] the other's body and I sense in him the same intention that reciprocally animates my own body" (2010, pp. 246-247). Put differently, we are able to perceive the presence of others through our bodies, and we become 'coupled' with the perceived person in a manner that is interactive or mutually communicative and yet facilitates individual subjectivity. Hence, Lymer articulates the maternal-foetal engagement as "a bonding process of body schematic coupling with the gestational mother that initially begins in utero but carries into infancy" (2010, p. 256).

Similar claims can be made with regards to the change in relation between twin foetuses and their mother, however, the time scales tend to differ considerably. As Castiello et al. remark, twins display goal direct movement towards the uterine wall at 14 and 18 weeks of gestation. This suggests that the maternal-foetal relation with each pre-infant twin has moved to one of reciprocity and communication. That is not to say, however, that the maternal body schema no longer acts as a model for the development of the foetal body schema. Rather, as we have seen, this body schematic coupling should be understood as an ongoing intertwining between bodies, or "transfer" of movements and gestures and body "bits and pieces", which continues to transform the body schemas of each twin (as well as their mother), and ultimately improves their capacity for meaningful action and engagement, and thus individual subjectivity. In short, accouplement with the maternal body schema continues to facilitate the development of each pre-infant.

Yet, one may still wonder, why does this intentional action, which enables a reciprocal and communicative relation between mother and foetus, manifest earlier in twin pregnancy? The answer, it would seem, is the particular circumstances of twin pregnancy, namely, as noted earlier, twins do not develop separately from each other, rather, we see from early in gestation an inter-twin contact that occurs because of the

transformation and reformation of the maternal body schema.[14] As touched upon, while Lymer mentions twins in her work, she fails to take into consideration that developing alongside another in utero may have a significant impact on the development of the foetal body-schema formation. She notes:

> The mark, at 22 weeks of intentional action suggests that this sense of ipseity is now developed enough that a sense of self and not self is displaying sufficient consistency that the foetus can discern an object to be intentional toward and the *only available objects are either self or maternal* (Lymer 2010, p. 249, my italics)

What Lymer is describing here, evidently is occurring earlier in twin foetuses because of the unique circumstances of their gestation; moreover, as touched on above, there was an increase of other-directed movements to the co-twin between the 14- and 18-week interval. Hence, in twin pregnancies, there is something else available along with the 'self' and 'maternal' at this point: the embryonic other that is the co-twin.

In other words, a reciprocity and communication seems to manifest in the engagement between twin foetuses during this stage. As Castiello et al. note:

> Interestingly, the kinematic profile of movements directed towards the co-twin displayed an even higher degree of accuracy: movement duration was longer, and the percentage of time spent decelerating was greater for movements directed towards the co-twin than for self-directed movements aimed at the eye or the mouth (2010, np).

Thus, it seems as early as 14 weeks, and certainly by 18 weeks, the body schema is functional enough to allow for a body schematic coupling not just with the gestational mother but also between each twin foetus.

To put this in Merleau-Pontian terms, the [pre-infant] does not perceive the outward appearance of the other but the action of the other: "it is in his conduct, in the manner in which the other deals with the world, that I will be able to discover his consciousness" Merleau-Ponty, 1964a, p. 117). The other presents me with "themes of possible activity for my own body" (Ibid.). In other words, communication with the foetal co-twin in utero is predicated on lived and perceived motility in the form of tactual inter-twin contact, or to rearticulate, twins are bodily schematically coupled with one another early in the second trimester. At this point, a sense of ipseity is now developed enough that a

[14] One might also claim that in twin gestation the process of transformation and reformation of the maternal body schema occurs at a greater pace when compared to singleton gestation, which may also contribute to this precocious body schematic development in twins.

sense of self and non-self is exhibiting sufficient consistency so the twin foetus does not perceive its co-twin as an object so much as it distinguishes, at an interactive level, that the expression (or action) of the co-twin is one it can make. As Castiello et al. point out:

> The finding that foetuses treat the co-twin as a special kind of target suggests that in twin pregnancies motor control might extend to incorporate information from intra-pair stimulation […] Foetuses might anticipate the sensory consequences of a movement and use them to plan an action related to the nature of the target (2010, np).

Thus, they speculate, "this precocious differentiation of movement patterns might be regarded as an expression of early motor development" (Ibid.).

However, at this point I wish to echo the concerns that Lymer expresses with regards to Zoia and colleagues. Put crudely, twin foetuses are more likely exhibiting an operative intentionality that does not require the kind of higher cognitive functioning as outlined by Castiello and colleagues.

More precisely, the kind of intentional action outlined by Zoia et al. (2007) and Castiello et al. (2011) is not the same as the kind of intentionality in Merleau-Ponty's sense of bodily directed action. Rather, as Lymer notes, these researchers are "employing the word intentional to mean premeditated and so they draw the conclusion that intentional action entails 'a surprisingly advanced level of motor planning'" (2010, p. 220). This does not follow within the Merleau-Pontian concept of operative intentionality as being bodily directed towards the world and others, which does not require any kind of cognitive planning. Thus, what we can then conclude from the research of Zoia et al. and Castiello et al. is that foetal behaviour at 22 weeks in singleton gestation, and between 14 and 18 weeks in twin gestation, can be bodily directed toward something, or in other words, has an operative intentional capacity.

As touched upon, at its very foundation, Merleau-Ponty suggests that consciousness has something to do with bodily intentionality or operative intentionality. Within his work, a minimal form of self-consciousness is a continual structural feature of our conscious experience. As he says,

> If the subject is in a situation, or even if the subject is nothing other than a possibility of situations, this is because he only achieves his ipseity by actually being a body and by entering into the world through this body (2012, p. 431).

Lymer clarifies:

> Experience happens for the experiencing subject in an immediate way and as part of this immediacy, it is implicitly marked as my experience. In the most basic sense of the term, self-consciousness is not to do with the introspection of one's experiences, or in recognition that the image in the mirror is one's own, or in the proper use of the first-person pronoun, or in the capacity to construct a self-narrative (2010, p. 251)

Instead, we can differentiate these different types of self-consciousness from pre-reflective ipseity or bodily self-awareness, which is present whenever we consciously perceive the world or undergo an experience.

In chapter 2, we saw that Zahavi advocates a similar view, which allowed us to argue that the conceptualisation of twinship as an absence or loss of self-other distinction is false, as at the very least, twins are temporally and spatially distinct subjects of experience with their own irreducible first-person perspective which entails a pre-reflective self-awareness. From this, I took as a premise for the overall study that twinship is founded on the self-other distinction which is always maintained thereafter. The syncretic stage which precedes twins' development does not constitute their relations proper, as these interactions are underpinned by the habituations of the maternal body schema. Rather, it is only when twins have developed a body schema that displays an operative intentionality or form of pre-reflective self-consciousness that their relations become reciprocal and mutually communicative. In other words, we can clearly see that twinship is founded on the self-other distinction. Moreover, twin foetuses are displaying a functioning body schema much earlier than their singleton counterparts, and hence, so too are they at this earlier stage exhibiting pre-reflective self-consciousness or operative intentionality. Somewhat ironically then, the earliest structures for subjectivity seem to develop in twins before they develop in their singleton counterparts.

However, an objection could be raised that what I am claiming is not possible, as a foetus would be too physiologically and neurologically immature. For instance, Lymer notes above that the required structures for a functional body schema are not formed until 15 weeks of gestation. However, this evidence only assesses neurological developmental in singletons; in contrast, the available evidence on multiple birth pregnancies suggests an acceleration of physical and neurological development (Amiel-Tison et al. 2004; Blickstein and Keith, 2005; Castiello et al. 2010). Therefore, it seems

possible to hypothesise that due to the unique environment provided by the maternal body schema, which not only provides a model for body schematic development in each twin but also enables early inter-twin contact (prior to 14-weeks gestation), the structures required for a functional body schema are in place at this earlier stage.[15]

It would seem fair at this point to claim that the developmental trajectory of the body schema in twins differs significantly from that of singleton foetuses, and this is because:

> [E]ach twin is an integral and active part of the environment of its co-twin […] intra-pair interactions exist between twin foetuses and this component is an active and distinctive constituent of the intra-uterine environment (Piontelli et al., 1999, p. 272).

[15] The term operative intentionality does not refer to the kind which we associate with beliefs, desires and judgements but rather with a more fundamental kind which forms the basis for more complex forms of act intentionality (i.e. one's ability to reason).

Indeed, it is precisely for this reason that the body schema is not a trivial concept. As explained by Merleau-Ponty, it captures our most basic and fundamental relation between self, other and world. Moreover, the idea "that living beings can move and respond to the environment" is widely accepted as a form of intentionality which establishes our "pre-predicative unity" and is considered to be one of Husserl's most significant contributions to philosophy, which is then taken up and developed by Merleau-Ponty as something which manifests through our bodies in *Phenomenology of Perception*.

With that, I contest the potential claim that we are forced to intellectualise the foetus. In fact, this is actually a concern I raise against Zoia et al. (2007) and Castiello et al. (2010) who most certainly ascribe a more complex intentionality to the foetus.

Moreover, the foetus does not take over the body schema of the mother; but rather there is an affective accouplement between the maternal body schema and the foetal body schema which enables a mutually constitutive relationship that allows for the transformation and reformation of both body schemas. Put differently, the gestational mother and her foetus do not communicate via two disembodied minds; but rather it is precisely because our minds are embodied that the mother and foetus can have a second-person access which enables this accouplement or interaction. To be clear, this is not founded upon the kind of asymmetry outlined in footnote 11—namely, a third-person (mediated and inferential) access vs. first-person (immediate and non-inferential) access. The second-person access on which this relation is founded is not mediated and inferential but rather is a direct and intuitive bodily access to the embodied mind of the other. Therefore, the foetus is not required to infer to have a reciprocal and communicative relationship with the mother. However, before this relationship can occur, the foetus must pass through the syncretic stage of development where the gestational mother "guides" it to a point where the body schema can properly function, and it is only then—with a functioning body schema—can the foetus distinguish between (a rudimentary) self and non-self. Moreover, during the syncretic stage, the maternal-foetal relation is not one of reciprocity; but rather the foetal body schema is imprinted via the transformation and reformation of the maternal body schema. Put simply, this process does not require a self/other distinction or any kind of complex cognitive capacities such as the ability to reason.

Finally, the available phenomenological and empirical evidence clearly points to some form of intentionality in the foetus, and thus the notion of the body schema and operative intentionality provides us with a rich framework for understanding this phenomenon. Indeed, I am unsure how else we can account for this phenomenon bar to ignore it?

In contrast to singleton pregnancy, twins from an early stage in gestation are body schematically coupled with one another. However, this coupling does not operate in the same guiding manner as the maternal body schema. Rather, the coupling of the foetal body-schemas of twins is underpinned or scaffolded by their accouplement with the maternal body-schema, and, as we have seen with the literature on inter-twin contact, this affords greater opportunity for each foetus to engage in movements and habituations, which in turn enhances body schematic development. It follows then that if body schematic development is enhanced by the presence of another embryonic other, then so too will operative intentionality.

At the beginning of this chapter I set myself the task of tracing the development of the robust passive synthesis or operative intentionality that I have argued is the principal function that allows twins to grasp each other's experiential life in an intuitive manner that is complex rather than basic. While what I have described so far does not yet provide us with the full account of this ontogenesis, it at the very least does provide us with some promising indications that this fundamental type of intentionality develops differently in twins.

It is evident that in comparison to single-born pregnancy, a functioning foetal body schema is present earlier in twin pregnancy. Early on, twin foetuses initially develop their body schemas in a syncretic stage via the transformation and reformation of the maternal body schema which also allows for early inter-twin contact. It is precisely this inter-twin contact which accelerates the development of the body schema and this is why operative intentionality is present earlier in twin foetuses. Once the foetal body schema reaches a stage where it is functional enough to allow for intentional action, we see that each foetus—like their single-born counterparts—has an affective body-schematic coupling with the maternal body schema, which allows for further development of the foetal body schema and individual subjectivity. However, we also see at this stage that—unlike their single-born counterparts—each twin has an affective body-schematic coupling with the body schema of their co-twin, which also allows for further development of the foetal body schema and individual subjectivity. Not only do twins develop their individual body schemas via their mother, they also develop their body schemas via each other, and therefore, their capacities for meaningful action and engagement in the form of an operative intentionality.

In short, if operative intentionality is the *modus operandi* of the body schema, and twins, through accouplement, are developing their body schemas in relation to each other (as well as their mother) early in gestation, one might hypothesise that this lays the groundwork for the kinds of exceptional intersubjective capacities we later see arising in twin-twin social interaction.

What is more, Lymer suggests that as a result of the body schematic coupling in the maternal-foetal relation, both the foetus and mother form an affective bond. Hence, she proposes, the maternal-foetal relation "may well set the foundations for affective intersubjective relations post-partum" (2011, p. 139). Or, in other words, this first physical, physiological, and affective "bond" to the gestational mother is what constitutes the ability to form attachment bonds to adults and older children outside of the womb (Dolezal, 2017, p. 325).

This is an important point, evidently twin foetuses are also physically, physiologically, and affectively bonded to one another through a body schematic coupling in utero. So, I might propose, while the affective bond that each twin foetus forms with their mother may allow for intersubjective relations with adults and older children post-partum, it is the bond that they form with one another that forms the basis for the exceptional intersubjective relations we see occurring between them post-partum.

Indeed, this physical, physiological, and affective bond seems to be evident at birth. In 1996 twin sisters were born in the University Hospital in Massachusetts. The twins were born prematurely at 28 weeks of gestation, both sisters were born with a low birth weight of around 900g. In accordance with hospital procedures, they were placed in two separate incubators. After a few days the state of one of the twins deteriorated sharply. A nurse, violating hospital procedures, transferred one of the twins to the incubator of the co-twin in an unstable state. Immediately, the stronger twin reached out its arm to hold and comfort its sibling. The 'rescuing hug' stabilised the weakened twin's heart rate and body temperature, and consequently, both twins survived (CNN[Youtube] 2013). This practice of co-bedding (as it has come to be known medically), is therefore based on the idea that extra-uterine adaptation of pre-term twins is improved by continued physical contact with the co-twin rather than a sudden lack of such stimuli (Campbell-Yeo et al., 2009).



The hug that helped change medicine (CNN[Youtube] 2013).

As we have seen, the body schema not only regulates and controls the body's posture and motility, but also how the body interacts with the objects and environment that constitute its immediate milieu. In the case of twins, "homoeostatic equilibrium" in gestation is achieved because, like the blind man who incorporates the cane into his body schema in order to allow for smooth motor functioning or bodily intentionality, so too have twins incorporated one another into their respective body schemas, so that each other become an appendage of the body or an extension of the bodily synthesis (Dolezal, 2017).[16] If the blind man loses his cane then smooth motor or operative intentionality will be impacted, and therefore his ability for meaningful action and engagement with his immediate milieu will be severely disrupted. Similarly, if twins, and particularly premature twins, are separated at birth, then smooth motor or operative intentionality will be impacted, and thus will disrupt their ability to act meaningfully and engage with one another. In other words, because of the nature of their body

[16] Similar phenomena have been reported between singleton neonates and the gestational mother. For example, the case of nurse Louise and the practise of kangaroo care (see, Klaus and Kennell 1983; Feldman et al. 2002; Lymer 2010).

schematic affective bond or accouplement, when neonate twins are separated, body schematic development is disrupted to the point of regression, therefore impacting individual subjectivity development.

However, when twins are co-bedded, the research points to exactly the kind of body schematic coupling or affective bonding we have explored in this chapter. Hayward et al., note: "Our findings are consistent with others that have suggested that co-bedding duration may be linked with a higher degree of physiological stability and regulatory behaviors" (2015, p. 199; Byers et al., 2003). In their study, they found that twins who were co-bedded "spent more time in the same state, less time in opposite states, were in quiet sleep more often, and cried less than twins who were cared for in separate cots" (Hayward et al. 2015, p. 201). Twins who have been co-bedded have been observed to support each other through a series of observed activities, termed "co-regulation". These activities have been shown to promote growth and brain development when they are allowed to continue after birth (Byers et al. 2003; Hayward et al. 2007; Campbell-Yeo et al. 2009) It seems evident that as twins are body schematically coupled or bonded in gestation, post-partum, a continuation of this reciprocal and communicative engagement is required in order to have a smooth operative intentionality, which precipitates the development of the body schema and thus individual subjectivity.

However, at this point, it would also seem important to draw some distinctions between monozygotic or identical and dizygotic or fraternal twins. As we will see in the next chapter, while both dizygotic and monozygotic twins have a different developmental trajectory in comparison to singletons, so too do they have a different developmental trajectory when compared to each other. This is evident from birth:

> To begin with (and sometimes from then on) certain twins did not react well to mutual physical proximity. Being put next to each other seemed to have little or no significance at this point […] Dizygotic twins in particular seemed quite disturbed by the vicinity of another baby (Piontelli 2002, p.191).

This is not to say that all dizygotic twins do not find mutual comfort through physical proximity, but rather, this seems to be less of an occurrence in comparison to monozygotic twins. This would seem to indicate that the physical, physiological, and affective bond is not as prevalent in cases of dizygotic twins.

I think one can explain this occurrence once we again consider the degree of separation between these different types of twins in gestation. In most cases, dizygotic twins have

a separate chorion sac, amniotic sac and placenta. This means that a thick four-layered septum separates them with two layers belonging to each membrane. This separation has been compared to that of a hand on a pregnant belly, and that of the infant on the inside (Piontelli, 2002).

On the other hand, most cases of monozygotic twins are either monochorionic-monoamniotic or monochorionic-diamniotic. Monochorionic-diamniotic twins share a placenta and a chorionic sac but are separated by two amniotic sacs. Piontelli points out: "The septum dividing them will be translucent, considerably thinner and two-layered, only containing amniotic membranes" (Ibid., p. 6). Monochorionic-monoamniotic twins share the placenta, chorion and amnion and hence, are not separated by anything at all.

As we have seen, mutually evoked responses start earlier and are usually stronger in monozygotic twins compared to dizygotic twins. Hence, Piontelli notes, "[monozygotic] twins rarely escape each other's blows, while the thicker membranes dividing [dizygotic] twins with separate placentas buffer the intensity of their co-twin's blows" (Ibid., p. 188).

What I am suggesting is due to the thickness of the membrane that separates them, body schematic development in most dizygotic twins does not develop at the same rate as monozygotic twins. It follows then, a functioning body schema does not appear in cases of dizygotic pregnancy until later in gestation, which means that dizygotic twins will not have the same opportunity for accouplement of body schemas. What is more, even when the functioning body schema is present, the thick septum that divides them may still further limit tactile interaction and therefore body schematic coupling. Consequently, this may hamper the intensity of the affective bond between them and thus their ability for interaction with one another post-partum. Consequently, it is important to keep in mind the differing developmental trajectories of both monozygotic and dizygotic twins, in particular the horizontal development of each type of twin, or their development via one another. Indeed, this makes sense if we consider that exceptional mutual understanding seems to be an occurrence reported more frequently in monozygotic twins rather than in their dizygotic counterparts (Piontelli, 2002; Bacon, 2011; Davis, 2014).

## Conclusion

At this point it seems fair to conclude that due to the particular nature of their gestation, in twins there is an allowance for a body schematic affective accouplement or bonding with both the gestational mother and the embryonic other that is the co-twin. Twins, like their single-born counterparts, are primed for affective intersubjective relations post-partum with adults and older children. Unlike their single-born counterparts, however, they are also primed for affective intersubjective relations with their co-twin post-partum (particularly monozygotic twins).

Therefore, I suspect that the robust passive synthesis, or more developed operative intentionality that I have earlier outlined, has its origins in the foetal body schematic coupling that occurs between twins in utero, and thus, if we are to give a full ontogenesis of this, we must continue to explore twins' development as children—in particular, their relations with one another. This will be the main task of the final chapter.

This will be achieved by placing twins' post-partum development within interactionist accounts of social cognition (particularly Gallagher's approach). What is more, we will see that interactionist approaches are heavily influenced by Merleau-Ponty's phenomenology as well as his account of operative intentionality. Hence, once again I will be able to anchor my account in those founded upon Merleau-Ponty's work.

However, we will also see, that as it stands, these accounts are not conceptualised in a fashion that is conducive to outlining the development of the exceptional intersubjective capacities of twins. There seems to be two chief reasons for this, namely, (1) they tend to focus on the infant's social development via adults and older children, and (2) they employ a notion of operative intentionality that is too narrow to account for EMU in twins. I will argue that if we are to provide an approach to social cognition which can adequately account for EMU in twins, we will need to consider their development not just through adults and older children but also their development through one another.

From this, we will see that in comparison to their singleton peers, twins, and particularly monozygotic twins, have highly developed forms of primary and secondary intersubjectivity.

This substantiates my claim in the last chapter that twins are highly attuned to one another's contextualised expressive bodily phenomena, as young twins are able to engage in pre-verbal sophisticated cooperative interactions with one another that are far more advanced than their singleton peers. This means that when they develop narrative competency, they can pre-reflectively and intuitively exploit the nuanced and implicit narratives that they have helped each other to shape. Together, this adds up to the robust passive synthesis or novel operative intentionality that manifests in twin-twin social interaction. Therefore, we will have a theoretical framework for researching EMU in twins, one I have argued that theory theory and simulation theory accounts seemingly cannot provide.[17]

[17] It might be argued that the approach adopted in my thesis departs too radically from Husserl's to be construed as falling within the phenomenological tradition. However, this is a point I would contest, and this is because the project is explicitly concerned with doing justice to the first-person accounts of twins, who claim to have an exceptional mutual understanding of one another, by describing the conditions which give rise to this EMU. To be precise, the central argument offered in this thesis is simply that a more robust passive synthesis or novel operative intentionality manifests in twin-twin social interaction, and it is this which gives rise to EMU between twins. Moreover, this is a philosophical rather than an empirical claim as it is concerned with matters of meaning rather than matters of fact.

In short, this project like many works of phenomenology (including its founder) is committed to a transcendental philosophy. Hence, any empirical claims are there to support the central philosophical claim (see, Chapter 5) and thus are of a secondary status.

Moreover, it would be a difficult task to offer a brief methodological reflection of what Husserl meant by phenomenology as his views changed considerably over the course of his lifetime. However, I think it is worth noting two points of relevance.

(i)The notion of the transcendental changed considerably over Husserl's philosophical career (Moran, 2002, p. 51). Zahavi notes:

> Husserl subjected the very notion of the transcendental to a far-reaching transformation […] Husserl's phenomenology is characterized by its attempt to modify the static opposition between the transcendental and the mundane, between the constituting and the constituted (2010, p. 15).

This is particularly important because this project is concerned with the work of the late Husserl as taken up and expanded upon by Merleau-Ponty in his *Phenomenology of Perception*. In so doing, the project is not concerned with the earlier work of Husserl which is focused on a narrower account of the transcendental – namely, an overly cartesian, solipsistic, disembodied phenomenology. Husserl later

> [A]rgued that actual being, or the being of actual reality, doesn't simply entail a relation to some formal cognizing subject, but that the constituting subject in question must necessarily be an embodied and embedded subject (Ibid.)

The point is, while the project is *implicitly* committed to some form of transcendental philosophy it is *explicitly* concerned with the embodied and embedded aspect of subjectivity and how that relates to intersubjectivity in the case of twin-twin social interaction. (ii) One may claim that this thesis is committed to a third person observational account of intersubjectivity in twins, an approach which is closer to Dennett than Merleau-Ponty. However, I would disagree with this claim. In fact, many major phenomenological thinkers would suggest that phenomenology can benefit from empirical research and vice versa (Zahavi, 2010; Ratcliffe, 2013b). Indeed, even Husserl seems to take such a view (Zahavi,

2010, p. 11), and Merleau-Ponty, although he would reject the kind of naturalism as proposed by Dennett, would claim that empirical studies–if used properly–can benefit phenomenological studies. This is perhaps most evident in his use of neuropathology in *Phenomenology of Perception* as well as his other works (see also, Merleau-Ponty 1964b, 2010a). Zahavi, in a similar vein, notes "as phenomenology deals with topics that it shares with other disciplines, it would be wrong to insist that it should simply ignore empirical findings pertaining to these very topics" (2010, p. 8) (For a decent overview of the relationship between phenomenology and cognitive science, see Gallagher and Zahavi, 2012).

In short, this thesis is an inter-disciplinary approach to understanding intersubjectivity in twin-twin social interaction. In other words, it draws on both theoretical and non-theortical literature, as well as first-person accounts and tries to make sense of these by interpreting these through a phenomenological lens. Moreover, as the project is a fruitful exchange between phenomenology and non-phenomenological disciplines it draws on the latter to influence how it is we can modify the existing phenomenological accounts to describe intersubjectivity in twins, namely, by expanding the concepts of passive synthesis and operative intentionality.

# Chapter 7: An Interactionist Account of Exceptional Mutual Understanding in Twins

## Introduction

The aim of the final chapter is to continue our study of the ontogenesis of the exceptional intersubjective capacities of twins, namely by examining their post-partum development.

The reasoning behind this aim is to substantiate the hypothesis set out at the end of chapter 5, specifically, that a robust passive synthesis or novel operative intentionality presents more intensely and frequently in twin-twin social interaction. To do this, I will anchor my account in interactionist approaches to social cognition. These approaches are heavily influenced by phenomenological accounts; hence, they are underpinned by the same presuppositions regarding the nature of the self and mind that I have argued are crucial to understanding exceptional mutual understanding in twins. They also deal extensively with the notion of operative intentionality and thus provide us with more resources for understanding its development in twins. Consequently, these accounts also offer a feasible alternative to theory theory and simulation theory approaches to social cognition.

However, like Merleau-Ponty and Lymer, interactionist approaches fail to take into consideration the effect a twin may have on the development of their co-twin's intersubjective capacities (and vice-versa) therefore, they fail to fully appreciate the novel way in which operative intentionality develops in twin-twin social interactions. One reason why interactionist accounts may have overlooked the more developed kind of operative intentionality we find in twins is because they tend to draw on literature that only focuses on the infant's social development through their interaction with adults and older children; this is because it is commonly held that development through other same age infants is limited. Yet, if one examines the developmental literature on twins it seems to point to the opposite, namely, that twin-twin social interaction in young twins is innovative and allows them to build intersubjectivity with one another. This supports my claim in the previous chapter that twins are primed for post-partum

intersubjective relations with one another because of the particular nature of their gestation.

Therefore, modifications will be required if we are to outline an interactionist approach to social cognition in twins. More precisely, we will see that communication between twins does not rely on language and dialogue to the same extent as singletons for higher forms of social understanding because they have highly developed and novel primary and secondary intersubjective capacities. In young twins, this allows for them to engage in pre-verbal cooperative interactions that are far more advanced than the interactive abilities of young, same age singletons. In mature twins, these novel intersubjective capacities mean that they can exploit the nuanced and implicit narratives they have helped each other to shape to rapidly grasp one another's complex mental and emotional lives in the *here and now*.

This is due to a shared interactive history that has its origins in a mutual influencing of body schemas in gestation, which allows for greater sediments of pre-reflective habitual meaning to be continually built between twins. This means they have a greater attunement to each other's expressive bodily phenomena; a more advanced ability to utilise pragmatic shared contexts in their social interactions; as well as nuanced pre-reflective narratives that they have helped each other to shape. In other words, twins have a second person perception-like access that allows them to directly experience *greater* aspects of their co-twin's embodied and embedded mind. In short, a robust passive synthesis or novel operative intentionality presents in their social interactions, and this is what enables exceptional mutual understanding (EMU) between them.

I conclude the chapter by outlining the main thesis argument and by putting forward its conceptualisation as an approach that will better allow us to appreciate twins and their twinship. I also conclude that this project sheds light on and contributes originally to numerous debates in phenomenology and in the cognitive sciences more generally. Finally, and most importantly, it offers a theoretical framework for future research on the exceptional intersubjective capacities we find in twin-twin social interaction, as obviously, more research will be needed to fully substantiate and refine the findings presented in this thesis.

**Interactionist Approaches to Social Cognition**

In this section, I will restate the main arguments from the previous chapters and then outline my rationale for utilising interactionist approaches to social cognition. Put crudely, I will argue that as these accounts are heavily influenced by the phenomenological tradition, they offer an explicit alternative to simulation theory and theory theory accounts. Moreover, they offer further resources for examining the development of operative intentionality and the exceptional intersubjective capacities we find in twin-twin social interaction.

In chapter 3 we explicitly examined both theory theory and simulation theory approaches to social cognition to see if these could account for EMU in twins. After examining some of the central claims of theory theory I put forward a preliminary hypothesis, namely, that twins are merely under an "expert illusion" of both self-knowledge and knowledge of the other twin. That is, the reason that twins can rapidly comprehend one another is not because they have a direct access to each other's mental life, but rather they have become experts at representing one another's mental states. However, this hypothesis did not stand up to scrutiny as theory theorists would argue that we cannot automatically grasp the other's mental states in a complex manner. Moreover, the available false-belief literature indicated that twins do not rely on a parallelism of self and other knowledge to comprehend mental states; rather, at least in the case of twins, there seems to be an asymmetry in self and other knowledge. This was consistent with my claim in chapter 2, specifically, that twinship could not arise without a self-other distinction. Hence, we turned to simulation theory, as it seemed to respect this asymmetry. However, both the explicit and implicit versions of simulation could not account for EMU either (1) because the explicit version cannot account for the rapidness in which twins comprehend each other, and (2) while the implicit version could explain this, it could not account for the intuitive and complex manner in which twins grasp each other's mental and emotional life.

Moreover, in chapter 4, we saw that simulation theory seems to overemphasise the self-other distinction. In other words, while on the one hand, we have a direct non-inferential access to our own mental states, on the other, we have an indirect inferential access to the minds of others. Hence, on this account we must implicitly or explicitly simulate the other first personally and then attribute those mental states to them.

In terms of an account of asymmetry, phenomenological approaches seemed to be better suited to outlining intersubjectivity in twins. This is because they argue that we have a direct perception-like (second person) access to others. Put another way, minds are embodied and embedded, therefore we can directly experience *aspects* of the other's experiential life. Yet, we saw that phenomenological accounts of perception-like empathy (in particular Zahavi and Husserl), could not fully satisfy all of the EMU criteria that I set out at the end of chapter 3, for a theory that can account for EMU in twins. More precisely, while they claim that one can have an intuitive perception-like grasping of other minded beings, this can only be a basic understanding. In contrast, we have seen that twins seem to have an intuitive perception-like grasping of each other's experiential life that is complex rather than basic.

In chapter 5, it was demonstrated that these thinkers' accounts of perception-like empathy are underpinned by a notion of passive synthesis that is too narrow to account for EMU in twins, thus it was necessary to broaden this notion. In short, I claimed that due to the exceptional amount of time twins spend together, a robust passive synthesis or novel operative intentionality presents in their social relations, meaning they can grasp each other's *complex* mental and emotional lives passively and associatively. Put another way, twins are highly attuned to one another's contextualised expressive bodily phenomena, hence they can directly experience *greater* aspects of their co-twin's embodied and embedded mind. However, one might object, if this robust passive synthesis merely arises due to spending an exceptional amount of time together, why do we not see this kind of EMU manifesting as frequently and intensely in other close relationships?

To show why this is the case and to further substantiate my hypothesis, in chapter 6, I carried out a study of the ontogenesis of the intersubjective capacities we find in twin-twin social interaction. This proved to be a promising approach, as by exploring the development of the foetal body schema in twins, we could see that the body schematic development of each twin seems to be functioning 4 to 8 weeks earlier than their singleton comparisons. At this stage, twins are body schematically coupled with the gestational mother and the co-twin, meaning their relations are reciprocal, communicative and transformative. What is more, by examining the empirical literature on co-bedding, we saw that a physical, physiological, and affective accouplement or bond seems to be also evident between (mainly monozygotic) twins at birth.

From this I argued that like singletons, twins through body schematic accouplement with the gestational mother are primed for intersubjective relations with adults and older children post-partum; however unlike singletons, twins through body schematic accouplement with the co-twin are primed for intersubjective relations post-partum with one another. This demonstrated that from early in gestation the developmental trajectory of twins differs significantly from their single-born counterparts. In other words, it supports my earlier claim that operative intentionality, the *modus operandi* of the body schema, develops differently in twins. Hence, it points to the notion that a robust passive synthesis or novel operative intentionality enables EMU in twins.

At that, more evidence is clearly required if we are to fully substantiate this hypothesis. Therefore, it will be necessary to once again anchor my work in accounts that also explore the development of intersubjective capacities in infants and children. To do this, I turn to interactionist approaches to social cognition.

These originated at the beginning of the 21st century when Gallagher (2001) put forward an interaction theory of social cognition (IT) in opposition to theory theory and simulation theory accounts. Interaction theory claims that interaction and social contexts are significant constitutional features in our development of social cognition. Put another way, interactions have a transformative effect on individuals who engage in them (Gallagher, 2001; 2005; Gallagher and Hutto, 2007; Gallagher and Zahavi, 2012; Froese and Gallagher, 2012). These accounts are heavily influenced by the phenomenological tradition—particularly Merleau-Ponty. As Gallagher and Miyahara note:

> Phenomenology suggests that in this kind of interaction there is a bodily intentionality distributed across the interacting agents, an intentionality that couldn't be realized without there being an actual interaction. Merleau-Ponty calls this 'intercorporeity', and characterizes it in this way: 'between this phenomenal body of mine, and that of another as I see it from the outside, there exists an internal relation which causes the other to appear as the completion of the system' (1962, p. 352, cited in, Gallagher and Miyahara, 2012, p. 134).

Similarly, Fuchs notes, bodily conduct is intentional and meaningful in its milieu, "and as such it is beyond the artificial distinction of internal and external. It constitutes a sphere of primary 'intercorporeality' as the basis for all forms of intersubjectivity" (2009, p. 562). These accounts, in essence, are a phenomenological approach to social cognition and therefore are founded upon the presupposition that minds are embodied

and embedded in contextualised social settings, hence we can directly experience aspects of the other's emotional and mental life in ongoing contextualised interactions. On this view:

> [W]e engage with others in ways that depend on embodied sensorimotor processes […] We enactively perceive the actions and emotional expressions of others as a form of intentionality—i.e., as meaningful and directed. Enactive perception of others means that we see their emotional expressions and contextualized actions as meaningful in terms of how we might respond to or interact with them (Gallagher and Miyahara, 2012, p. 135).

Another way of putting this is that "we ordinarily perceive another's intentionality in the form of 'operative intentionality' (Ibid.). In other words, intercorporeity comprises an accouplement or mutual influencing of body schemas, it "involves a reciprocal, dynamic and enactive response to the other's action, taking that action as an affordance for further action" (Ibid., p. 134).

Hence, it should be clear that these approaches to social cognition are consistent with my account, as they offer an alternative to (1) simulation theory and theory theory approaches; (2) they are underpinned by the same presuppositions about the nature of the mind and the self-other distinction we find in the phenomenological tradition; and (3) they rely on a similar conception of the body schema and operative intentionality that I have utilised to outline my account thus far.

Most importantly, as touched upon in terms of understanding how twins' exceptional intersubjective capacities manifest post-partum, interactionists' approaches provide an anchor for my own account because they outline how a single-born person's intersubjective capacities develop based on a mutual influencing of body schemas or through interaction with adults and older children.

However, to my knowledge these accounts have not yet considered how having a twin may affect the development of one's operative intentionality and therefore their intersubjective capacities. One reason for this may be that the phenomenological tradition from which they draw in large part tends to overlook twins. Another reason for this, as will see in the next section, is that in much of the developmental literature, the focus is on the infant's development through adults (and older children) rather than same age children. In other words, both the theoretical and (at least some of) the

empirical literature on which interactionist approaches formulate their accounts of social cognition, are based on singleton development.

Nonetheless, I think once some modifications are made, these approaches will allow us to fully understand how the exceptional intersubjective capacities we find in twins develop. Simply, I will argue that highly developed and novel forms of primary and secondary intersubjectivity manifest in twins' social interactions, meaning they do not rely on language and dialogue to the same extent as singletons for higher forms of social understanding between them. In young twins, this allows for them to engage in pre-verbal cooperative interactions that are far more advanced than the interactive abilities of young same age single-born children. In mature twins, these novel intersubjective capacities mean that they can exploit the nuanced and implicit narratives they have helped each other to shape to rapidly grasp their co-twin's complex mental and emotional life (i.e. in the *here and now).* Put another way, a robust passive synthesis or novel operative intentionality enables EMU in twins.

Before we get to this, however, it will be useful to explore how these approaches outline the development of social cognition in general.

**The Development of Social Cognition in Singletons**

Gallagher is the phenomenologist most explicitly associated with interactionist approaches and it is mainly from his account that I outline and formulate my own. Drawing on developmental literature and insights found in phenomenology, Gallagher demonstrates how social cognition arises as a result of the infant's and child's interactions with adults. Children on this view pass through three stages of development in which they acquire and/or develop the intersubjective capacities associated with these stages. These are primary intersubjectivity, secondary intersubjectivity, and narrative competency (Gallagher, 2004, 2009; Gallagher and Hutto, 2007; Gallagher and Zahavi, 2012; Froese and Gallagher, 2012).

*Primary intersubjectivity,* beginning from birth, manifests as the infant's perception-based access to embodied others. Indeed, the research that Gallagher uses to argue that the neonate is born with a functioning body schema is also used to demonstrate that infant imitation is the initial way in which primary intersubjectivity is expressed (Meltzoff and Moore, 1977; Gallagher and Meltzoff, 1996). Hence, "infants from birth

are capable of perceiving and imitating facial gestures presented by another (Gallagher and Zahavi, 2012, p. 209).

Primary intersubjectivity further develops over the child's first year post-partum. An infant can track another's eye direction; this ability is central for allowing them to understand where and what the other is looking at. Drawing on Hobson (2002), Gallagher notes that infants are able to distinguish intentions and emotions in the other's posture, movement, facial expression, gesture, vocalisations and actions (cited in, Gallagher, 2009). He shows that between 9 to 11 months, infants are capable of seeing "bodily movement as expressive of emotion, and as goal-directed intentional movement, and to perceive other persons as agents" (Ibid., p. 294, see, Walker, 1982; Hobson, 1993; 2005; Baldwin & Baird, 2001; Baird & Baldwin, 2001; Baldwin et al., 2001; Senju et al., 2006).

Gallagher notes that infants are not taking an observational stance; they are interacting with others. For instance, "infants vocalize and gesture in ways that are affectively and temporally 'tuned' to the vocalizations and gestures of the other person" (Ibid.; see, Gopnik and Meltzoff, 1997, p. 131).

As touched upon, in this sense, the infant's direct perception-based access to the other is enactive, "it is perception-for-action or more precisely—for-interaction, rather than mere off-line observation. From birth the infant is pulled into these interactive processes" (Gallagher and Zahavi, 2012, p. 209). For example, "the child smiles, the adult responds with a related expression, drawing forth a continued response from the child" (Gallagher 2009, p. 293).

Reddy (2008) calls this reciprocity of temporal synchronizations and desynchronizations in social interaction between the infant and adult a "proto-conversation". After the first month, infants become sensitive to such reciprocity (i.e. timing and turn-taking) in their interacting with adults, and this allows for a sense of shared experience or intersubjectivity (Rochat, 2001).

For Gallagher, primary intersubjectivity is not just a precursor to other forms of more complex forms of intersubjectivity, and thus is not something left behind as the infant matures. Rather, as he notes, phenomenology shows that we rely on our perceptual access to other persons affective expressions, the intonation of their voice, the posture

and style of movement involved in their action, their gestures, and so on, to pick up information about what they are feeling and what they intend (Gallagher, 2004, 2009).

Normally, around the beginning of the first year, the advent of joint attention and the capability to share pragmatic and social contexts shifts into what Gallagher calls *secondary intersubjectivity*.[18] As noted above, our perceptual access to the other's postures, movements, gestures, vocalisations, facial expressions, and actions are embodied. However, now they become embedded in our shared world.

> In secondary intersubjectivity the world begins to do some of the work as we try to understand others. The pragmatic and social situations within which we encounter others help us to make sense out of the other person. The things around us set the stage for carrying out certain actions (Gallagher, 2009, p. 294).

At 18 months, toddlers are able to recognise the incomplete intentions of adults "because they know from the setting and the instruments at hand what the person is trying to accomplish" (Ibid.; see also, Meltzoff, 1995; Woodward & Sommerville, 2000; Schilbach et al., 2008). At this stage, young children also begin to comprehend the meaning of social roles as they are tied to precise social settings (Ratcliffe, 2007), which enables them to understand another person's behaviour. As Gallagher notes: "Secondary intersubjectivity gives us access to the others' intentions as they develop in the immediate environment, the here and now" (2009, p. 294). Drawing on Hobson's summary of secondary intersubjectivity, he explains:

> The defining feature of secondary intersubjectivity is that an object or event can become a focus between people. Objects and events can be communicated about […] the infant's interactions with another person begin to have reference to the things that surround them (Hobson, 2002, p. 62, cited in, Gallagher, 2004, p. 207).

Young children are not simply passive observers, instead, as we have seen, through accouplement of body schemas they interact with adults, and in so doing they develop additional intersubjective abilities in the contexts of those interactions. In secondary intersubjectivity:

> A young child not only understands that another person wants food or intends to open the door, that the other can see him (the child) or is looking at the door, but he now begins to share interactions directed at objects in the world (Ibid.).

[18] Borrows the terms primary intersubjectivity and secondary intersubjectivity from Trevarthen and Hubley (1978) and Trevarthen (1979).

Behaviour indictive of joint attention starts to develop between 9 to 14 months. The child is capable of alternating between the gaze of the adult and what the adult is looking at, and will continue to check that both him or herself, and the adult, are continuing to look at the same thing:

> Philips, Baron-Cohen, and Rutter (1992) show that infants between nine and eighteen months of age look to the eyes of the other person to help interpret the meaning of an ambiguous event. Eighteen-month-old children can comprehend what another person intends to do. They are able to reenact to completion the goal-directed behavior that an observed subject does not complete. The child, seeing an adult who tries to manipulate a toy in the right way and who appears frustrated about being unable to do so, quite readily picks up the toy and shows the adult how to do it (Gallagher 2004, p. 207; see also, Meltzoff, 1995; Meltzoff and Brooks, 2001).

For Gallagher, it seems evident that this comprehension depends on shared attention and the pragmatic context. Children can understand other's actions at the most relevant pragmatic, intentional level. In contrast to theory theory approaches to social cognition, he notes:

> We do not need to make an inference to what the other person is intending, starting by observing the movements of her hands on the toy, and moving thence to the level of desires and beliefs. Just as when we are asked 'What are you doing?' we never respond 'I'm acting on a belief that I am thirsty', so, in such pragmatic circumstances, we do not look beyond the actions of others to try to find the beliefs that motivate them. Indeed, the very question in many contexts is unnecessary: if I see you reach for a glass and a bottle of water, I know what your intentions are as much from the glass and bottle of water as from your reach (Ibid.).

We understand the actions "of others in terms of their goals and intentions set in contextualized situations, rather than abstractly in terms of either their muscular performance or their beliefs" (Ibid.).

In short, through the child's development of primary and secondary intersubjectivity via interaction with adults, expressive bodily phenomena become embedded in our pragmatic shared contexts, and this gives rise to further capabilities for more complex interactions.

In the last stage of a person's intersubjective development, they do not leave primary or secondary intersubjectivity behind, rather, as Gallagher says, "language acquisition and participation in communicative practices assists this extension of secondary intersubjective understanding and helps to inform the development of *narrative*

*competency*" (2009, p. 294, my italics). This allows children to understand actions and interactions as they are *spread out over extended periods of time*. He remarks:

> Starting in a preliminary way around two years and fostered by the stories that we read to children, narrative builds and expands on secondary intersubjectivity and starts to provide more subtle and sophisticated ways of framing the meaning of the other's intentions and actions (Ibid.; Gallagher & Hutto, 2008).

Gallagher refers to two theories with regard to narrative competency. The first is what he calls the implicit framing hypothesis (Gallagher, 2006a), which argues that in developing narrative competency, we implicitly understand the actions of ourselves and others (over an extended period of time) in a narrative framework. In other words, our perception and comprehension of actions and emotional expressions of others start to be implicitly framed by narratives (Gallagher, 2009).

The other relates to more abstract or puzzling cases for understanding others. The narrative practice hypothesis (Hutto, 2008a; 2008b) claims that narrative gives the concepts that are basic to folk psychological practice or theory theory. As Gallagher says:

> If we are capable of taking a mindreading stance […] this is possible in part because we gain conceptual and generalizable knowledge of others through narrative practices. Our narratives can become, reflectively, folk-psychological narratives (2009, p. 295).

A more complex understanding of others is not based on postulating hidden desires or beliefs or simulating the other in order to understand them, it is rather enabled by general cultural narratives and narratives we have about particular persons that can be explicitly or implicitly used to understand others.

Yet, while interactionist approaches to social cognition are an appealing way of outlining the kinds of intersubjective capacities we find in twins, it seems that they still would not fully capture the novelty and complexity of the intersubjective capacities we find in twin-twin social interaction, and this is because their conception of operative intentionality is still too narrow.

For these thinkers it is important to understand how we *ordinarily* understand others in our everyday pre-reflective engagement with the world, meaning we usually experience both ourselves and others in terms of an operative intentionality. Yet, if this conception of operative intentionality can be applied to twins, then Gallagher's account would not be describing *ordinary* cases of social cognition at all, but rather, he would be outlining

*exceptional* cases of mutual understanding, that can be found in some relations between single-born persons but is found more frequently and intensely in the relations between twins.

Indeed, consider an example that Gallagher and Miyahara utilise to flesh out the conception of operative intentionality they have in mind:

> Suppose you are driving a car along a busy street and see a person restlessly looking left and right at the edge of the street where there are no crosswalks. You slow down a little in case he runs onto the street, or at least you ready yourself to press the brake pedal. If the passenger in the car with you asked you why you slowed down, you might answer that the person looked like he wanted to cross the road. In this reflective explanation it seems as if the person had been experienced in terms of his mental states, i.e., his desire to cross the road, which constitutes a reason for a further action of crossing the road. This, however, is a way of putting it that is forced by reflection. In fact, in the original action, placing your foot on the brake pedal just is part of what it means to experience the intentionality of the person at the edge of the road (2012, p. 136).

It is evident that the kind of operative intentionality employed here allows one to have a pre-reflective understanding of the other that does not rely on mentalising, yet, we could hardly say it amounts to a complex understanding of that person. It rather amounts to a pragmatic or practical narratively framed understanding of others in our *ordinary* everyday social interactions. In other words, the driver can see in the given context and through the person's movements and posture that they intend to cross the road, as generally speaking, that is what people in these types of situations intend to do. Hence, the driver understands how to respond to the intentionality of the person who intends on crossing the road without having to postulate or simulate mental states hidden behind observable bodily behaviour.

It should be obvious, then, that we require an account of operative intentionality that can explain *exceptional mutual understanding* in twin-twin social interaction, not *ordinary everyday* (singleton) social interactions. Indeed, generally speaking for singletons to achieve the kinds of understanding we find in twins, they would have to engage in the "normal intersubjective means of coming to understand others through dialogue and conversation (Gallagher and Zahavi, 2012, p. 215; Hutto, 2008a, 2008b). As Zahavi notes:

> Scheler claims that the distinct cognitive activities of the other person, his or her thoughts, will remain concealed and hidden until the other decides to reveal and communicate them […] This is why language proves so *essential* for higher

> forms of social understanding (Scheler 2008, pp. 102, 225 cited in, Zahavi 2014a, p. 120, my italics).

Yet we have seen that twins do not need to rely on dialogue and conversation to the same extent as other relationships. Rather, in the first-person accounts, we have seen that observers claim twins' non-verbal communicative skills were "on a different level" and that twins claim a "look" or "glance" can *immediately* communicate a whole complex thought (Sipes and Sipes, 1999; Kohl, 2001; Davis, 2014).

Moreover, researchers remark on the special intuitive and complex understanding twins have of one another that cannot be compared to ordinary siblings, an exceptional mutual understanding that means with a glance they can rapidly understand the complex mental and emotional life of their co-twin (Zazzo, 1976, 1978; Crystal, 1987,1989; Piontelli, 2002; Stewart, 2005; Bacon, 2011; Barron-Hauwaert, 2011; Davis, 2014).

As Erin Clark, noting her social interactions with her twin, explains:

> Because of how we have come to interact with each other, we know how the other will act, and react, in almost all situations, and we can *anticipate* what the *other is thinking, what the other will say* (2011, p. 22, my italics).

Now, consider as an example of this, a recent social interaction between myself and my twin brother as told from the perspective of my partner who witnessed it:

> This is what happened in the Old Neptune [pub].
>
> You had gone off to the bathroom and myself and Andrew were deep in conversation with each other. When you came back you briefly joined the chat but had really come back over to ask for something. You barely looked at Andrew and said 'give me some eh...'
>
> 'Change.' Andrew finished certainly and without pause as he reached into his pocket. It was particularly striking because in the first second or two, I had no idea how he managed to know what you were going to say. We hadn't been talking about anything to do with money or buying anything, *it seemed totally out of context*. A few seconds later though, I realised what had happened [after the fact].
>
> Before you left for the bathroom, you had been sitting opposite Andrew and mentioned the music on the jukebox. When you came back to the table, you stayed on the same side as Andrew, where the jukebox was, and you didn't sit down. It was obvious to me that you intended on going back to the jukebox to put music on, but only a couple of seconds later. For Andrew it was *instant*, as though it was a continuation of your own thought (O'Donohue, 2017, np, my italics).

The point is this: I approached *two* persons who *intimately* know me to get some change for the juke box. My twin brother, through operative intentionality, *immediately* grasped my intentionality; instead, while my partner could see that I required something, she had to rely on a more active kind of intentionality to grasp what this was. In other words, twin-twin social interactions are not *ordinary* cases of social cognition. As Gallagher notes:

> In contexts where we may gain a sense of the other's emotions and/or intentions by means of direct perception, one may still need to go further for an understanding of their reasons for acting or for understanding why they believe what they believe (2016, p. 134).

In other words, my partner had to go beyond what was given directly in the case of my puzzling action, by using a more active process of filling in the 'rationale' that was not immediately obvious to her (Gallagher and Zahavi, 2012, p. 216), whereas clearly my twin immediately grasped this in the *here and now*.

Hence, operative intentionality, as utilised by current interactionist accounts, is used to explain *ordinary* (singleton) everyday interactions and thus is not sufficient for describing the kinds of *exceptional* intersubjective capacities found in twin-twin social interaction. However, I am not claiming interactionist accounts of social cognition should be disregarded. Rather, they need to be modified in order to take account for this more robust passive synthesis or novel operative intentionality that manifests in twin-twin social interaction.

As noted above, to my knowledge, theorists working within interactionist approaches to social cognition do not consider twins in their work. One reason for this may be related to a premise that underpins much of the developmental literature from which they draw, namely, cognitive and social development in neonates and infants occurs through their relations with adults and older children, rather than with infants of the same age where the potential for development is limited (Ross, 1982; Brownell and Brown, 1992; Løkken 2000; for a review see, Hay, Payne and Chadwick, 2004).

Yet, we will see that like singletons, twins do develop their intersubjective capacities via adults and older children. Unlike singletons, however, they also develop their intersubjective capacities via their co-twin, and this is because of the particular nature of their gestation. This means that primary and secondary intersubjectivity manifest more intensely in twin-twin social interactions, meaning that they are highly attuned to one

another's contextualised expressive bodily phenomena, and it is this that forms the basis for EMU in twins. This means that in their mature social interactions, they can exploit the nuanced narratives they have helped each other to shape, to *rapidly* grasp each other's complex mental and emotional lives rather than having to rely on more active processes for filling in 'rationale' that is not immediately obvious (or without having to ask).

Yet, we have seen that many twin researchers claim that each twin's social development is in fact hindered by their twinship. As noted earlier in the project, this is because rather than formulating developmental outcomes based on research that treats the developmental trajectory of twins as a distinct phenomenon, many academics apply research on singleton developmental outcomes as a means of understanding twins. As Rice et al. note: "standardized norms are established on single-born children (2018, p. 80; see also, Walker et al., 1992. p.174). Therefore, social development in twins is often presented as merely a poorer form of what occurs in singletons (DiLalla, 2006).

As shown, on this basis, twinship is often conceptualised as a kind of psychopathology that inhibits the development of each twin; therefore, if twins are to follow a developmental pattern closer to the standardised norms based on singletons, the effects of their twinship must be somewhat negated. Usually this is achieved by encouraging the vertical dimension to twins' development. Put another way, maximising time spent developing via adults is recommended and ideally this should be done individually (nhs.uk, 2019; tamba.org.uk, 2019). In other words, as we have seen, the extra or horizontal dimension of twins' development is often understood as having a negative effect (Luria and Yudovich, 1959; Douglas and Sutton, 1978; Hay et al. 1987). For example, there is clear and recurrent documentation that claims twins' social and linguistic development occurs at a much slower rate than single born children and this is attributed to the twinship (Day, 1932; Davis, 1937; Albrecht, 2007; see Savic, 1980 for a review).[19]

However, as should be clear from the last chapter, if we are to outline an interactionist developmental account of twins that enables us to understand how a novel from of operative intentionality develops between them, it will be necessary to explore both

[19] As Hay et al. note: "Several clinical examples exist of twin pairs whose excessive closeness led to delays in language, cognition and social development" (1987, p. 214).

twins' development through adults and older children as well as their development with one another. Put another way, there is another dimension to the development of subjectivity and intersubjectivity in twins that interactionist accounts do not consider, because they have failed to consider twins or/and there is a singleton bias that underpins the body of phenomenological and empirical research from which they draw.

Hence, it will be my task in the following to outline an interactionist account that does not adhere to standardised norms founded on single born children. However, to do this it will be necessary to compare twins with singletons (as well as monozygotic with dizygotic twins). Yet, I will do this not to show that a twin constitutes some kind of deviation from a singleton norm, but rather to show how the experiences of both monozygotic and dizygotic twins are just differing manifestations of consciousness or being-in-the-world. In other words, I will conceptualise the developmental pattern found in the differing types of twins to be unique, and twinship to be fundamentally healthy rather than some form of psychopathology.

**An Interactionist Account of EMU in Twins**

The first significant difference in the development of intersubjective capacities between twins and singletons has already been demonstrated. Lymer's work shows that a body schema is evident in the accouplement that occurs between singleton foetuses and their gestational mother at around 22-weeks of gestation. Indeed, in twins this occurs even earlier, namely, at 14 weeks we see a coupling between each twin foetus and a coupling with the gestational mother. Gallagher claims that infant imitation, and therefore primary intersubjectivity, is made possible from birth because the neonate is born with a functioning body schema, which means that interaction with an adult is reciprocal, communicative and transformational. Indeed, the kinematic profiles demonstrate that contacts after 14 weeks indicate a similar kind of reciprocity. Therefore, we can backdate the initial manifestation of *primary intersubjectivity* to the interactions that occur both between twin foetuses and the mother beginning at 14 weeks of gestation.[20]

On this basis, one might expect to see more complex forms of interaction very soon after birth, yet, barring the co-bedding literature, there does not seem to be research that observes more complex interaction between twins in the first few months of their post-

[20] And 22 weeks for singletons foetus as Lymer demonstrates, although she does not refer to it as primary intersubjectivity (2010, 2011).

partum development. However, Piontelli claims: "Usually 'social' mutual signalling involving visual contact and some form of facial expression and vocalisation […] started at around 3–4 months after birth" (2002, p. 98). One reason that a twin may not exhibit more complex forms of social interaction in the first few months after birth could be due to their new environment. As Lymer notes in her own research:

> Post-birth the infant no longer has the mother (and her uterus) to physically support the manoeuvre. Thus, the task that presents to the infant in early extra-uterine life is not to learn how to roll over but *how* to incorporate new environmental challenges such as gravity and floors into an already practiced manoeuvre (Lymer, 2010, p. 248, authors italics)

Put in context of this research, without the scaffolding provided by the gestational mother and her uterus, more complex forms of interaction may not be possible until each twin adapts to the challenges presented by their new environment. As Piontelli notes: "only when their vision began to mature and when placed face to face in the same cot did the twins begin to show the earliest signs of visual social signalling" (2002, p. 98). Nevertheless, she also remarks that all [monozygotic and dizygotic] twins who displayed exceptional mutual understanding had shared their cot up to at least six months, for her, this coincidence was puzzling (Ibid., p. 128).

For us this is neither coincidental nor puzzling, as the twins who share a cot up until at least six months evidently are allowed greater opportunity for coupling of their respective body schemas and therefore a greater development of primary intersubjectivity with each other. In other words, twins have a greater opportunity to become more attuned to the expressive phenomena of the co-twin (i.e. gestures, movements, vocalizations and so forth). Consider this:

> As a toddler Henry, a monozygotic twin boy, went through a phase of frequently being in a temper. Nick, his co-twin, was able to *anticipate* these changes of mood. Consequently, at these times, he would keep well clear of his brother even before Henry had manifested any apparent signs of temper. Their mother commented 'Nick works just like a barometer for Henry. He can predict the sun or rain, and by looking at him I know exactly what to expect next from Henry' (Ibid., p. 125, my italics).[21]

[21] Affectivity - as it is used in the phenomenological tradition - captures a wide variety of phenomena. Fuchs explains, the umbrella terms "affectivity," "affective states," or "affects" denote different phenomena such as, (1) vital and (2) existential feelings, (3) affective atmospheres, (4) moods, and (5) emotions", and in particular he emphasises their embodied as well as interaffective dimensions (2013b, p. 613).

Indeed, this greater opportunity for the development of primary intersubjectivity or attunement to one another's expressive phenomena seems to be substantiated by the literature. As Walker et al. note:

> Dickman and Clark (1985), found that certain interactive behaviors emerged early for twins. In a study of social competence, one pair of twin boys and their

---

With regards to my work I am mainly concerned with the development of emotions as well as their embodied, and inter-affective dimensions; and how it is that these are a condition of possibility for the kinds of EMU we find in twin-twin social interaction.

One would be correct to point out that this is perhaps something I do not pay enough attention too in the project, as the affective dimension that twins experience in their interactions with one another will indeed differ in character in the various stages of development. Or put another way, the kind of affect that twins experience will become more nuanced as they pass through the different stages of development, thus allowing for more complex forms of social understanding. Moreover, while I am clear in the discussion that twins, via accouplement or interaction, become highly attuned to one another's expressive bodily phenomena, what I do not explicitly discuss or outline adequately is how this is achieved through their bodies as a *bodily resonance* (Fuch and De Jaegher, 2009; Fuchs, 2013b, 2016).

In Merleau-Ponty's view, it is only through such interactions that I will experience my own subjectivity. "So, to engage in intersubjective accouplement or to choreograph our body schema movements is to have a corresponding positive self-experience" (Lymer, 2010, p. 30). Indeed, the co-regulation we see as a result of co-bedding in early infancy as well as the kinematic profiling of twin foetuses points exactly to such "a mutual bodily resonance." Yet, it is important to keep in mind that the kinds of affectivity that twins experience in relation to one another in gestation and early infancy can only be regarded as simple affect. In other words, twins' experience of one another at this stage could not be precisely the same as those experienced in later development because they have not yet developed the intersubjective capacities to experience more complex forms of affect. Moreover, the development of these affective capacities—at least in gestation and early infancy—is in large part guided by the maternal body schema and by the interventions of the primary caregiver as well as adults and older children. For example, the developmental literature shows that twins in early infancy are explicitly attracted to the mature facial expressions of adults and that it is only when they are placed side by side that we see rudimentary forms of interaction (Piontelli, 2002). In short, at this stage in twin development —one could speculate—that their experiences of one another can merely be characterised as simple positive and negative affect.

As each twin matures, they then begin to become highly attuned to the expressive bodily phenomena of the co-twin via bodies, or more specifically via the corresponding bodily resonance that they experience in their interactions with one another. Put another way, due to a shared interactive history that begins in gestation sediments of pre-reflective habitual and affective meaning are built between twins and thus become part of their operative intentionality. As they further develop, and particularly with the advent of secondary intersubjectivity, one would expect that the kinds of affect that twins experience with one another become more structured, in the sense that they now do not merely experience simple positive and negative affect. Rather, they experience a variety of different kinds of affect which are made unambiguous by the social settings in which they arise. Indeed, as noted in the main discussion this affective bond that develops through the accouplement of body schemas seems to be at the core of the sophisticated cooperative interactions we see in young pre-verbal twins (see below). That is, highly structured forms of affect mean that twins are highly attuned to the contextualised expressive phenomena of the co-twin and thus social understanding is achieved by the corresponding bodily resonance that they experience in their interactions with one another. Thus, this highly structured affectivity is central to exceptional mutual understanding (EMU) in twins because it allows them to rapidly exploit the nuanced and implicit narratives (they have about each other) to gain a complex understanding of one another in the *here and now*.

> mother were videotaped monthly in a lab playroom from age 8 months to 2.2 years. The twins showed interactive behaviors at an earlier age than the norms for singletons [interaction with same age singletons]. In a similar vein, Goshen-Gottstein (1986) observed 14 sets of twins, triplets, and quadruplets in their homes, beginning in infancy. These multiple-birth infants generally began visual interactions during the fifth or sixth month. Interactions involving touching and taking were common by 8 months. Goshen Gottstein (1986) observed examples of even more precocious interaction, such as a set of twins interactively touching at 5 months and copying each other's vocalizations at 7 months (1992, pp. 174-175).

Hence, a range of interactive behaviours manifest earlier in twin-twin interaction in comparison to their single-born counterparts of the same age, which demonstrates a greater opportunity for the development of primary intersubjectivity—including imitation.

For thinkers like Merleau-Ponty, Gallagher and Lymer, imitation can be understood not as a mere one-sided copying of other's actions, but rather as a form of intercorporeity or a coupling of body schemas, which is reciprocal, communicative and transformative. It should be understood as a kind of "synchronicity" or "moving with" (Lymer, 2010), or as a form of intercorporeality that allows for the ongoing intertwining between bodies, or "transfer" of movements and gestures and body "bits and pieces", which continues to develop one's body schema, and ultimately, the capacity for meaningful action and engagement with others (Dolezal, 2017).

Imitation or 'moving with' is a significant feature of twin-twin interaction. As Piontelli notes: "As time evolves [young] twins not only continue to constantly 'study' each other, but also begin to imitate the activities and 'solutions' of the other. Imitation soon becomes routine practice" (p. 129). Yet, as noted in the previous chapter, due to the thickness of the septum dividing dizygotic twins, accouplement of body schemas may be affected, thus disrupting the affective bond between them. This seemed to be evident when examining the co-bedding literature, as in general monozygotic twins tended to find mutual comfort from close physical proximity with their co-twin, whereas most dizygotic twins did not. Indeed, further demonstrating that the affective bond between dizygotic twins may be disrupted due to the nature of their gestation, Piontelli (2002) also notes that while most monozygotic twins are strong imitators of each other, a good number of dizygotic twins seem to imitate their co-twin only minimally.

Lymer argues that because imitation is a form of body schematic coupling, "then it will be those to whom an infant is bonded that will draw them into imitative action" (2010, p. 152). Drawing on work from Maratos (1982), she demonstrates that imitation is more reliable and consistent with bonded caregivers rather than with strangers. Indeed, this also seems to be evident in (particularly monozygotic) twins, as Piontelli explains:

> Twins start imitating and 'learning' from each other at an uncommonly precocious age. In a like manner to attachment, a horizontal 'learning' takes place parallel to the prevalent vertical one (2002, p. 129).

Twins, like their single-born counterparts, are prone to imitating adults too. As noted above, we explicitly see mutual social signalling at 3 and 4 months, however, before this, "twins directed their attention almost exclusively towards adults, or even towards slightly older children. They seemed attracted solely by more 'mature' facial features and expressions (Ibid., p. 98). Thus, it seems clear that at least some dizygotic, and most monozygotic twins, are indeed primed for intersubjective relations with both adults and their co-twin post-partum.

According to Merleau-Ponty, infants are drawn into imitation, as via the imitative act, the infant is better able to grasp the intentionality and affect within the gesture, and thus experience the other. For him, imitation of the gesture allows the infant access to the experiential life of the other, as through imitation the infant experiences accouplement with the adult. As he says:

> [T]o see that a perspective on the other is opened to me from the moment I define him and myself as 'conducts' at work in the world, as ways of 'grasping' the natural and cultural world surrounding us (Merleau-Ponty 1964, p. 117).

Lymer notes, "this means that infant imitation is not about aped learning [or one-sided copying] but rather is the child's access to the intersubjective world" (2010, p. 291).

Evidently, this horizontal accouplement or imitation with the co-twin is scaffolded by the vertical accouplement with the adult.[22] Put another way, at least some of the intersubjective behaviours learned in each twin's development are most likely initially grasped via accouplement with the primary caregiver in both or at least one of the twins. For example, if one twin via accouplement with a primary caregiver develops a new

[22] Indeed, the social relations between twins and their mother have often being described as an interactive triad (Karns and Fogel 1990; Barton and Strosberg 1997).

gesture or action, the co-twin, through coupling with the slightly more advanced twin, can also develop this gesture or action (Piontelli, 2002).

Yet, if we were to say that twin-twin accouplement is merely secondary to adult-twin accouplement, it would follow that twins developmental trajectory could be considered merely a poorer form of singleton development. Indeed, as we have seen, this is often how social development in twinship is characterised, and is given as a reason as to why language development is slower than when compared to their singleton peers. In other words, as we have seen above, the bond between twins, which is characterised as an "excessive closeness" or "pathological interdependence" of twinship, hinders language development.

However, if one examines cases of infantile twin-twin interaction, there is clearly something innovative about the kinds of intersubjectivity that manifests between them. For example, consider the YouTube video titled 'Twins acting out scene from Frozen', where 23-month-old twins Madelyn and Scarlett re-enact the scene 'Let it go' from the children's film *Frozen* (YouTube, 2017). At first glance one might think that they are merely very proficient imitators, yet it becomes clear that these twins are not merely copying the exact same movements at the same time; one twin is not imitating the other.

Rather, both are re-enacting the separate but coordinated movements of the two characters Elsa and Anna. To be clearer, one twin re-enacts the movements of Anna, while the other re-enacts the movements of Elsa and these movements are temporally and spatially coordinated with each other. Indeed, for sophisticated cooperative coordination such as this, one might expect at least one of the agents to have proficient language usage.

Yet, at 23 months, single-born infants have not developed anything close to what we would term proficient language usage and, as we already know, language development occurs later in twins. Rather, this precocious ability for sophisticated mutual cooperation and coordination between these twins precedes language development. Clearly then, horizontal accouplement between twins is not secondary to adult-twin development or vertical accouplement.

In other words, it is not a poorer form of singleton development, rather, Walker et al. suggest "that the history of interaction infants of multiple births experience with their birthmates may facilitate the development of sophisticated patterns of social interaction"

(1992, p. 175). Hence, it seems, imitation in twin-twin social interaction allows for novel forms of intersubjectivity to arise between them, and this is because imitation is reciprocal, therefore it is "not only a copying capacity; it is also a source of innovation. It allows individuals to connect, build intersubjectivity and feel what other individuals feel" (Rochat, Passos-Ferreira and Salem, 2009, p. 178). In short, social interaction between twins leads them to develop further capabilities in the contexts of those interactions (Gallagher and Zahavi, 2012, p. 211).

Indeed, as noted above, Madelyn and Scarlett are not simply imitating one another. The more developed primary intersubjectivity experienced in their interaction with one another has, at this stage, become contextualised in their shared world. Put another way, the embodied perceptual access they have to one another's movements, posture, vocalisations, gestures and actions in primary intersubjectivity have now become embedded in the world. In other words, their interactions are now characteristic of *secondary intersubjectivity*. As touched upon, the crucial feature of secondary intersubjectivity is that an object or event can become a focus between persons. Clearly then, these twins are capable of communicating about objects and events, and their interactions with each other have reference to the things that surround them.

This communication could not happen purely on the basis of greater opportunity to become more attuned to the expressive phenomena of the co-twin. As Gallagher and Zahavi point out, we encounter other persons "in worldly situations, and our way of being together and understanding each other is co-determined in its meaning by the situation at hand" (Ibid., p. 212). For them, it is exactly "within such common, and mainly pragmatic, situations that expressive phenomena occur" (Ibid.). To demonstrate this, they draw on an example from Aron Gurwitsch, who analyses a circumstance where two labourers are cobbling a street. In this situation, one labourer lays the stones while his colleague knocks them into place. Hence, "each worker is related to the other in his activity and comportment. Both workers understand each other in virtue of the roles they play in the common situation" (Gurwitsch, 1979, pp. 104, 108, 112, cited in, Ibid.). Of course, this example is referring to persons with fully mature social and linguistic capacities which obviously underpin their shared activity.

Nonetheless, I think if we relate this to the example of Madelyn and Scarlett above, it becomes clear how they are able to engage in sophisticated *pre-verbal* cooperative

behaviour with each other. At every stage in the sequence, at least one of the twins is watching what is happening on the television screen. The twin who is watching the event then initiates aspects of the coordinated sequence, allowing the co-twin to grasp what their role is at that particular temporal or spatial point in the sequence. Put differently, this implicit communication of coordinated spatial and temporal roles is grasped in the direct perception-like access each twin has to the expressive phenomena of their co-twin, in other words, by the gesturing, touching, vocalisation or movement of each twin.

Yet, as Gallagher and Zahavi note:

> [F]acial expressions and bodily gestures are not unambiguous. They do not reveal psychological states simply or uniformly. Each person has different countenances and facial habits. But this is rarely a problem, since we do not encounter expressions in isolation. They always occur in a given context, and our understanding of the context, of what comes before and after, helps us understand the expression (Ibid., p. 212).

Hence, it seems what expressive phenomena signify in a particular setting becomes comprehensible to each twin in their worldly situation, thereby allowing for sophisticated *pre-verbal* cooperative interaction in these twins.

Moreover, as Gallagher and Zahavi note, "this is not taking an intentional stance, i.e. treating the other as if they had desires or beliefs hidden away in their minds; rather, the intentionality is perceived in the contextualized actions of others" (Ibid., p. 211). In other words, Madelyn and Scarlett are not interacting cooperatively due to an act intentionality that allows them to explicitly mentalise or simulate the intentions of the other that are hidden behind overt bodily behaviour, but rather they pre-reflectively perceive one another's intentions and emotions via bodily or operative intentionality. Put another way, each twin enactively perceives the other's emotional expressions and contextualised actions as meaningful in terms of how they can respond to or interact with each other.

While it was long thought that young (single-born) children are incapable of cooperating with their social peers up until 4 or 5 years of age, some rudimentary cooperation has indeed been shown to occur between them (Ross, 1982; Brownell and Brown, 1992; Løkken, 2000; for a review see, Hay, Payne and Chadwick, 2004). However, differences in the levels of sophistication and sustained cooperative interaction between twins and their singleton peers is marked. As Piontelli notes, the

majority of young monozygotic twins were better playmates: “[m]ost of them were quite co-operative and imaginative players. Their mutual games far exceeded the play activities of their singleton peers in sophistication and duration” (2002, p.147; see also, Loehlin and Nichols, 1976; Lytton, 1980; Segal, 1984).

The main point I am making here is that while singletons seem to mainly develop their intersubjective capacities through adults and older children, twins are clearly developing innovative pre-verbal intersubjective capacities through each other (as well as adults). In other words, both primary intersubjectivity and secondary intersubjectivity are more sophisticated in the social interactions between young twins when compared to their singleton peers. As Piontelli notes “[twins have an] unusually early and intense mutual comprehension, including a particular capacity to decipher each other’s body language (2002, p. 128; see also, Hall, 1959; Morris, 1985).

One may well claim that this is simply due to time spent with one another, rather than a unique developmental trajectory that originates in a foetal body schematic accouplement between (mainly) monozygotic twins in gestation. Yet, dizygotic twins who spend roughly the same amount of time together as their monozygotic counterparts “were less companionable in their playing. Many tended to go fairly separate ways. Others just fought. Only a few were co-operative” (Ibid, p. 145). Having a twin, then, is not essentially the same as spending time with many other same-age children. As Dilalla notes: “There appears to be something particular about being raised with a genetically related, same-age child that affects how children interact with other children” (2006, p. 99).

I contend that this is a novel operative intentionality or robust passive synthesis, which manifests as a result of a reciprocal and transformative influencing or coupling of each other’s body schemas that originates between twins (in particular monozygotic twins) in gestation, and continues to develop and form the basis of their interactions throughout their respective lives. Put another way, the history of twin-twin social interaction comprises a mutual influencing of body schemas, which build sediments of meaning that are embedded, embodied, habitual and pre-reflective. Moreover, these interactions are innovative; they give rise to exceptional intersubjective capacities. In other words, twin-twin interaction allows for the development of novel forms of primary and secondary intersubjectivity.

As touched upon, it is well-established that language development is delayed in twins; others have also claimed that symbolic play, which is considered a necessary precursor to language development, is underdeveloped in young twins when compared to singletons (Wilson and Harpring, 1972; Wilson, 1974, 1975; Hay et al., 1987). However, it should be clear from the above empirical and anecdotal evidence that symbolic play is not in actuality underdeveloped in twins.

As we have seen, one of the hallmarks of secondary intersubjectivity is that an object or event can become a focus between persons, who can then communicate about it among themselves. In other words, twins who are able to engage in sophisticated cooperative pre-verbal interactions are clearly capable of referencing objects and events around them. As Rochat, Passos-Ferreira and Salem note:

> By becoming referential [in secondary intersubjectivity], infants also open the gate of symbolic development. They develop a capacity for dual representation whereby communicative gestures stand for and become the sign of something else (e.g., a pointing gesture as standing for a thing out there to be shared with others) (2009, p. 183).

In fact, it would seem that symbolic understanding plays a crucial role in twin-twin social interaction, as evidenced by the more sophisticated secondary intersubjectivity we see manifest between them. In other words, symbolic understanding is highly developed in pre-verbal twins' social interactions, precisely because of the accouplement of their body schemas, which build sediments of meaning that are habitual and pre-reflective. In the context of our current discussion, this meaning is embedded in the world, it is something that can be shared between twins, and thus it is symbolic; not only that, in relative terms it is also highly complex when compared to the interactions of their single-born peers.

Language development, then is not delayed because twins' development is merely a poorer form of singleton development, or because twins share an unhealthy pathological 'excessive closeness'. Rather, pre-verbal twins have a precocious and exceptional ability, and as we have seen, this means they have highly developed novel primary and secondary intersubjective capacities. Put differently, they are highly attuned to one another's contextualised expressive bodily phenomena, and thus, they already

understand each other well enough without having to develop socialised and conceptual forms of language (Zazzo, 1978).[23] As Piontelli remarks:

> Silent understanding frequently develops in old couples, this usually being preceded by long years of verbal entente. Twins, on the other hand, engage in preverbal and non-verbal forms of mutual comprehension and perception which precede, and sometimes possibly even delay, language (2002, p. 126).

Indeed, one might add that the language delay experienced in twinship allows for even greater development of both primary intersubjectivity and secondary intersubjectivity.

From an interactionist perspective, it follows that if language is delayed, then so too will be narrative competency, as language acquisition and verbal communicative practices help to inform narrative understanding (Fuchs, 2009; Gallagher and Zahavi, 2012).

Yet, it does not follow that the development of narrative competency does not play a role in the mature intersubjective capacities we find in the cases of exceptional mutual understanding in twins. Despite the initial lag, most twins, via vertical learning or accouplement with adults, catch up with their singleton peers' linguistic development (Karns and Fogel, 1990; Barton and Strosberg, 1997; Rice et al, 2018).[24] Language development begins in singletons on average around two years; twins are generally considered to be about 6 months behind, but normally have caught up with their single-born peers by about 3 years old (Lewin, 2016, p.34; see also, Davis 1937; Piontelli, 2002; Barron-Hauwaert, 2011).

Like singletons, twins acquire language through communicative interactions with adults, which enables them to further extend their already highly developed primary and secondary intersubjective understanding, and this assists in the development of narrative competency. As we have seen in Chapter 2, narratives can only arise in our relations with others. Twins do not just form narratives in their interactions with others outside of

[23] Some may argue that twins do indeed develop a language or what is known as an *idioglossia*. However, I would argue this twin language is not a language in the proper sense, rather the pre-linguistic vocalisations that twins share in their social interactions are merely part of a repertoire of embodied expressive phenomena (i.e. gestures, movements, actions) that are made unambiguous in their shared contextualised world. As Zazzo notes, instead of acquiring socialised and conceptual forms of language, young twins favour "purely emotional and 'synpractial' ones, i.e., forms that are closely connected to the ongoing activity" (1978, p. 11).

[24] Indeed, it has been suggested that because twins learn in a triadic interaction with the primary caregiver, they may be more advanced in comparison to singletons "when it comes to triadic conversational skills, especially those involving multiple children" (Barton and Strosberg, 1997, p. 268).

the twinship, they also form self-narratives and other-narratives (i.e. narratives that aid their understanding of the co-twin) through their social interactions with each other.

To rearticulate, many twins—particularly as children—spend a considerable amount of time interacting with each other, therefore their narrative understanding will be incredibly nuanced. However, one may claim that some siblings (as children) also spend a considerable amount of time interacting with each other, and thus should also have a very nuanced narrative understanding of each other, and indeed, many probably do; yet, in general, we do not find the same kinds of exceptional intersubjective capacities in their social interactions.

I contend this is because they do not share the same developmental trajectory as twins (particularly monozygotic twins). That is, non-twin siblings do not have an intersubjective relationship that has a genesis in gestation, which in turn allows for greater attunement to each other's expressive phenomena in the primary intersubjective stage, and a more advanced ability to utilise pragmatic shared contexts that develop in the secondary intersubjective stage. Rather, they follow the established trajectory of social cognition as outlined by interaction theorists, more precisely, their intersubjective capacities are mainly developed through adults, not both through adults and a same age sibling, namely, a co-twin.

As explored earlier in this project, a narrative must link up to the non-narrative components in the formation of an acting subject, indeed, it seems clear that a narrative must also link up to the non-narrative components in our understanding of other acting subjects. Put differently, exceptional mutual understanding in twins is enabled by their *advanced primary and secondary intersubjective capacities*; this means they can *rapidly* exploit the nuanced narrative understanding they have of each other to habitually and pre-reflectively comprehend one another's complex mental and emotional life. In other words, exceptional mutual understanding is enabled by a robust passive synthesis or novel operative intentionality that allows mature twins to intuitively grasp *greater* aspects of their co-twin's embodied and embedded mind. In other words, a twin can have a perception-like grasp of their co-twin's mental and emotional life that happens in the *here and now* rather than *over an extended period of time* and this is *complex* rather than *basic*.

Let us consider the above further. As already discussed, Gallagher refers to two hypotheses with regard to narrative competency, namely, the narrative practice hypothesis and the implicit framing hypothesis—I am chiefly concerned with the latter. The implicit framing hypothesis claims that by gaining narrative competency, we begin to implicitly understand the actions of others as well as ourselves over an extended period of time, in terms of narrative frameworks. That is, our *ordinary* everyday social interactions now come to be implicitly formed by narratives.

> An implicit use of narrative simply means that while I interpret another person's actions, I do so without realizing that I'm understanding the other person's action in narrative terms, that is, contextualized in terms of what went before, or where I think the action is heading, what I know about this particular person or what certain typical cultural narratives lead me to expect in this particular situation. (Gallagher and Zahavi 2012, p. 216).

We have seen above that Gallagher is referring to our *ordinary* everyday ways of experiencing others, and not EMU in twins. Yet, I think when we consider the fact that twins have novel intersubjective capacities, we can apply this to an example I provided earlier, namely, my interaction with both my twin and my partner.

In the example provided, my partner and my twin have access to the same pragmatic shared contexts and expressive phenomena. As we have seen, primary and secondary intersubjectivity are not something that we leave behind as we mature. As Gallagher and Hutto note: "the abilities for intersubjective interaction and understanding that start with primary and secondary intersubjectivity, develop along a route that in most *ordinary cases* exploits [over an extended period of time] narrative competency" (2008, p.32, my italics).

As touched upon, in twin-twin interaction (particularly monozygotic twins) *primary and secondary intersubjectivity* are evidently more sophisticated; therefore twins will be better able to exploit narrative competency, that is, they do not just exploit narrative competency over a period of time but are able to rapidly exploit narrative competency to grasp their co-twin in the *here and now*.

Put another way, while my partner clearly had access to my contextualised expressive phenomena and was able to see that I needed something, she still had to rely on somewhat actively framing my reasons for action in a narrative to grasp what exactly this was (i.e. change for the jukebox). Yet we have seen, this is not an *ordinary* case of social cognition, as my partner could not use primary and secondary intersubjectivity to

exploit a narrative to implicitly grasp my reasons for action. On the other hand, my twin had already *immediately and passively* grasped this in a pre-reflective narrative understanding, and understood exactly how to respond (i.e. saying 'change' while simultaneously reaching into his pocket for change). In other words, my twin is able to *immediately* understand and respond to my actions because there is a robust passive synthesis or novel operative intentionality present in our social interactions.

Put another way, because of a shared interactive history that since gestation has been made possible by a mutual influencing of body schema, sediments of pre-reflective habitual meaning have been built between twins. These include: greater attunement to expressive phenomena; a more advance ability to utilise pragmatic shared contexts; and nuanced implicit narratives, which they have helped each other to shape. Simply put, in comparison to non-twin social interactions, twins have highly developed and novel primary and secondary intersubjective capacities, which translate as a more robust passive synthesis or novel operative intentionality. Let us return to an example I provided earlier in the thesis to further demonstrate this:

> Observers have been struck by the *intuitive* way in which one twin is able to respond very *rapidly* to what the other has just said, and how the first twin is able to *anticipate* when to stop. They very seldom talk at the same time […] They know each other's rhythms, and each is able to *predict* a great deal of what the other is likely to say (1987, p. 247; 1989, np, my italics).

These twins are not predicting what the other is likely to say—that would imply some kind of mentalising—rather, they are enactively perceiving the intentions (i.e. what they are going to say) of the co-twin because they are highly attuned to the minute and nuanced expressive bodily phenomena of the co-twin and the contexts in which that expressive phenomena is embedded. This allows them to rapidly exploit the nuanced and implicit narratives they have about each other to understand one another's mental and emotional life in the *here and now*—even in complex verbal exchanges as the example above demonstrates.

**Conclusion**

Earlier, I put forward the hypothesis that a robust passive synthesis manifests in the social interactions between twins because of the exceptional amount of time they spend together, particularly as children. However, I anticipated that some may object to the idea of a robust passive synthesis on the basis that twins are not the only close

relationship where both agents spend a considerable amount of time together, and yet, we do not see the same kinds of exceptional mutual understanding arise as frequently and as intensely in those relationships. Hence, it was necessary to carry out an ontogenesis of their intersubjective capacities to understand why this is the case.

Put simply, the reason why a robust passive synthesis or more developed operative intentionality presents in twin-twin social interaction is because (particularly monozygotic) twins follow a developmental trajectory that differs significantly from non-twins. In other words, twins follow a unique developmental pattern that begins as early as 14 weeks in gestation. Once they have developed a functioning body schema, they undergo an accouplement of body schemas, which means their relations from this stage are reciprocal, communicative and transformative. This means from early in gestation twins build sediments of habitual pre-reflective shared meaning. This mutual influencing of body schemas continues post-partum, as evidenced by the co-bedding literature. Moreover, we see while singletons mainly develop their intersubjective capacities via adults and older children, twins also develop novel intersubjective capacities via each other. These manifest as innovative and highly developed forms of primary and secondary intersubjectivity that allows for them as young children to engage in sophisticated pre-verbal cooperative interactions, which we do not find in other same age single-born children. Put another way, a robust passive synthesis or novel operative intentionality presents in pre-verbal twins' social interactions.

These highly developed and novel primary and secondary intersubjective capacities form the basis for the exceptional mutual understanding we find in mature twins. That is, twins are able to utilise these capacities to rapidly exploit the implicit and nuanced narratives they have helped each other to shape to immediately grasp one another's complex mental and emotional lives in the *here and now*.

Moreover, this accouplement of body schemas, which begins in gestation, does not amount to an absence or loss of the self-other distinction. As Fuchs notes:

> This intercorporal coupling is not some kind of contagion, but a subtle non-verbal communication by which we become aware of each other's state in a much more intimate way than is possible in remote observation (Fuchs 2013a, pp. 662-663)

In other words, we have seen that twins cannot experience their co-twin in the same manner in which they experience themselves because they have an irreducible first-person perspective that can only be given to their co-twin via a second person access.

In outlining such an account, this project has challenged those academics who conceptualise twinship as an over bonded supra-individual unit, or the notion that twins are pathologically interdependent. We have seen this is because these accounts of twins are underpinned by a singleton bias, that is, they try to place twins within a theoretical framework for understanding singletons rather than treating twinship as a unique manifestation of human existence or being-in-the-world, which is fundamentally healthy.

In challenging these mis-conceptualisations and providing an alternative account of twinship, this project also contributes originally to a number of ongoing debates in phenomenology and the cognitive sciences. To rearticulate that positively, paying more attention to twin-twin social interactions productively informs current discussions of empathy and social cognition in philosophy and the cognitive sciences in several ways.

To be precise, a phenomenologically inspired interdisciplinary analysis of twin-twin social interaction and its ontogenesis supports several key presuppositions put forth by the phenomenological tradition and simultaneously refutes key ideas advanced by theory theorists, simulation theorists and third-person observational accounts of social cognition and empathy more generally.

For example, it supports the idea that in many cases a theory of mind or folk psychology is not the primary way in which we grasp the mental life of others. In fact, in demonstrating this the analysis challenges what is a central claim of theory theory, namely, that there is a parallelism or symmetry in self-knowledge and other-knowledge.

Instead, it endorses the idea that there is an asymmetry in how we comprehend the minds of others; however, it does not support the kind of asymmetry as advanced by simulation theorists because they overemphasise the self-other distinction. That is, they claim, while on the one hand, we have a direct non-inferential access to our own mental states, and on the other, we have an indirect inferential access to the minds of others. The thesis argues in favour of the kind of asymmetry as put forward by several key phenomenological thinkers. That is, in our social interactions with others we have a direct non-inferential access to our own minds and a basic direct non-inferential access

to the experiential life of the other. Hence, it favours accounts of social cognition and empathy which oppose the conceptual separation of body and mind, and therefore disregards the simulationist idea that empathy is a two-step process which first consists of a third-person access to observable behaviour; and second, a first-person simulation which we ascribe as a mental or emotional state to that behaviour. In short, the project sides with thinkers who argue for the idea of a more fundamental second-person access, which allows us to directly experience the contextualised (embedded) affective and embodied aspects of the other's mental and emotional life.

This account of twin-twin social interaction also supports ideas surrounding the developmental origins of empathy and social cognition as put forth by several thinkers working on the phenomenology of pregnancy. More precisely, it backs the arguments that social relations begin before birth and that our primary relation with our gestational mother is fundamental in constituting the basic structures for the development of subjectivity as well as intersubjectivity.

Most importantly, it challenges a central claim put forward by several key phenomenological thinkers, such as—the Zahavi-Husserl account of empathy. That is, while they claim that one can have an intuitive perception-like grasping of other minded beings, for them, this can only be a basic understanding. In contrast, we have seen that twins seem to have an intuitive perception-like grasping of each other's experiential life that is (to some degree) more sophisticated. As demonstrated, this is enabled by the more robust passive synthesis or novel operative intentionality that manifests in their interactions. Hence, while I would be reluctant to claim that the passive synthesis or operative intentionality that arises in twin-twin social interactions can manifest to the same intensity in non-twin cases of social interaction, my analysis of twin-twin social interaction points to the idea that passive synthesis or operative intentionality can indeed manifest more intensely in cases of social interaction where the participants share a particularly close relationship. For example, silent and intuitive understanding has been reported in older couples (Piontelli, 2002). Hence, it would seem that there are other cases of human social interaction which demonstrate that we can indeed have an intuitive perception-like grasping of each other's experiential life, which is to some degree sophisticated rather than basic.

In short, this thesis points to the idea—that phenomenologists in general—seem to take for granted highly entwined cases of social interaction and thus I would argue that by paying closer attention to these we will broaden and enrich our understanding of empathy and social cognition more generally.

Finally, it provides a theoretical framework for future research on the exceptional intersubjective capacities we find in twin-twin social interaction, as clearly more evidence will be required to fully substantiate and refine these findings.

**Bibliography**


Adelman, M., and Siemon, M. (1986) 'Commuinicating the Relational Shift: Separation among adult twins', *American Journal of Psychotherapy*, 40(1), pp. 96 -109.

Ainslie, R. C. (1997) *The Psychology of Twinship*. Lincoln, NE: University of Nebraska Press.

Albrecht, S. (2007) 'Preverbal language abilities in monozygotic and dizygotic twins. Inquiry', *The University of Arkansas Undergraduate Research Journal*, 8(1), pp. 1-8.

Amiel-Tison, C., Cabrol, D., Denver, R., Jarreau, P.H., and Papiernik, E. (2004) 'Fetal adaptation to stress. Part I: acceleration of fetal maturation and earlier birth triggered by placental insufficiency in humans', *Early Hum Dev* 78(1), pp. 15–27.

Andrews, E. (2009) *The twins who lost two years of togetherness: Girl meets sister for first time after 20 month fight for life*. Available at: http://www.dailymail.co.uk/ (Accessed: 7 Sep. 2016).

Apperly, I., Riggs, K., Simpson, A., Chiavarino, C., and Samson, D. (2006) 'Is belief reasoning automatic?' *Psychological Science*, 17(10), pp. 841–844.

Apperly, I., and Butterfill, S. (2009) 'Do humans have two systems to track beliefs and belief-like states?' *Psychological Review*, 116(4), pp. 953–970.

Apperly, I. (2011) *Mindreading*. New York: Psychology Press.

Arabin, B., Bos, R., Rijlaarsdam, R., Mohnhaupt, A. and Van Eyck, J. (1996) 'The onset of inter-human contacts: longitudinal ultrasound observations in early twin pregnancies', *The Official Journal of the International Society of Ultrasound in Obstetrics and Gynecology*, 8(3), pp. 166-173.

Bacon, K. (2011) *Twins in society*. Basingstoke: Palgrave Macmillan.

Back, E., and Apperly, I. (2010) 'Two sources of evidence on the non-automaticity of true and false belief ascription', *Cognition, 115(1),* pp. 54–70.

Bahler, B. (2015) 'Merleau-Ponty on Children and Childhood', *Childhood & Philosophy*, 11 (22), pp. 203-221.

Baird, J.A. and Baldwin, D.A. (2001) 'Making Sense of Human Behavior: Action parsing and intentional inference', Malle, B.F., Moses, L.J., and Baldwin, D.A. (eds.), *Intentions and intentionality: Foundations of social cognition. Cambridge*, MA: MIT Press.

Baldwin, D.A. and Baird, J.A. (2001) 'Discerning Intentions in Dynamic Human Action', *Trends in Cognitive Science,* 5 (4), pp. 171–8.

Baldwin, D.A., Baird, J.A., Saylor, M.M. and Clark, M.A. (2001) 'Infants Parse Dynamic Action', *Child Development,* 72 (1), pp. 708–17.

Bargen, D.G. (1991) 'Twin blossoms on a single branch: The cycle of retribution in Onnamen' *Monumenta Nipponica*, 46(2), pp.147-171.

Bowlby, John (1969) *Attachment and Loss. Vol. I, Attachment*, New York: Basic Books.

Baron-Cohen, S., Leslie, A.M. and Frith, U. (1985) 'Does the autistic child have a "theory of mind"?' *Cognition*, 21(1), pp.37-46.

Baron-Cohen, S. (1993) 'The concept of intentionality: Invented or innate?' *Behavioral and Brain Sciences*, 16(1), pp. 29-30.

Baron-Cohen, S. (1995) *Mindblindness: An essay on autism and theory of mind*. Cambridge, MA: MIT Press.

Baron-Cohen, S. (1995) *Mindblindness: An essay on autism and theory of mind.* Cambridge,

Barron-Hauwaert, S. (2010) *Bilingual siblings: Language use in families*. Bristol: Multilingual Matters.

Barton, M.E. and Strosberg, R. (1997) Conversational patterns of two-year-old twins in mother–twin–twin triads. *Journal of Child Language*, *24*(1), pp. 257-269.

Biceaga, V. (2010) *The Concept of Passivity in Husserl's Phenomenology*. London : Springer.

Bloom, P., and German, T.P. (2000) 'Two reasons to abandon the false belief task as a test of theory of mind', *Cognition*, *77*(1), pp. B25-B31.

Blickstein, I., and Keith, L.G. (eds.) (2005) *Multiple pregnancy: epidemiology, gestation, and perinatal outcome*. London: CRC Press.

Blumer, C. (2016) *Truth about twins: Do they feel each other's pain, have ESP or share the same DNA?* Available at: https://www.abc.net.au/news/ (Accessed 20 January 2018).

Bongiorno, F. 2015. *Perceiving Meaning: Delusional Perception and Passive Synthesis*. Unpublished MA thesis. Durham University.

Brownell, C.A. and Brown, E., (1992) 'Peers and play in infants and toddlers', In *Van Hasselt, V.B., and Hersen, M. (eds.) Handbook of social development*. Boston, MA: Springer.

Bruner, J. (1991). 'The Narrative Construction of Reality'. *Critical inquiry*, *18*(1), pp.1-21.

Bruner, J. (1994) 'The Remembered Self', in Neisser U., and Fivush R. (eds.) *The Remembering Self: Construction and Accuracy in the Self Narrative*, Cambridge: Cambridge University Press.

Bruner, J. and Fleisher Feldman, C. (1996) 'Group Narrative as a Cultural Context of Autobiography', in D.C. Rubin (ed.) *Remembering Our Past.* Cambridge: Cambridge University Press.

Bruner, J., (2004) ‘Life as narrative’. *Social research*, 54(1), pp.691-710.

Bruzina, R. (2018) *Logos and eidos: The concept in phenomenology*. Berlin: Walter de Gruyter GmbH & Co KG.

Burlingham, D. (1952) *Twins: A Study of Three Pairs of Identical Twins*, London: Imago Publishing.

Butterfill, S.A., and Apperly, I.A. (2013) ‘How to construct a minimal theory of mind,’ *Mind & Language*, *28*(5), pp. 606-637.

Byers, J., Yovaish, W., Lowman, L., and Francis, J. (2003) ‘Co-bedding versus single-bedding premature multiple-gestation infants in incubators’, *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 32(1), pp. 340–347.

Campbell-Yeo, M.L., Johnston, C.C., Joseph, K.S., Feeley, N.L., Chambers, C.T. and Barrington, K.J. (2009) ‘Co-bedding as a Comfort measure For Twins undergoing painful procedures’, *BMC pediatrics*, *9*(1), doi:10.1186/1471-2431-9-76.

Carel, H. (2016) *Phenomenology of illness*. Oxford: Oxford University Press.

Carman, T. (1999) ‘The body in Husserl and Merleau-Ponty’, *Philosophical topics*, 27(2), pp. 205-226.

Carman, T. (2008) *Merleau-Ponty*. Routledge.

Carroll, L. (1971) *Alice’s Adventures in Wonderland and Through the Looking Glass*. London: Oxford University Press.

Carruthers, P. (1996a) ‘Simulation and self-knowledge: A defence of theory-theory’, in Carruthers P., and, Smith P.K. (eds.) *Theories of theories of mind*. Cambridge: Cambridge University Press.

Carruthers, P. (1996b) ‘Autism as mind-blindness: An elaboration and partial defence’, in Carruthers P., and, Smith P.K. (eds.) *Theories of theories of mind*. Cambridge: Cambridge University.

Carruthers, P. (1996c) *Language, thought and consciousness*. Cambridge: Cambridge University Press.

Carruthers, P. (1998) ‘Natural theories of consciousness’, *European Journal of Philosophy*, 6(2), pp. 203-222.

Carruthers, P. (2000) *Phenomenal consciousness. A naturalistic theory*. Cambridge: Cambridge University Press.

Carruthers, P. (2011) *The opacity of mind: An integrative theory of self-knowledge*. Oxford: Oxford University Press.

Case, B.J. (1991) *We Are Twins But Who Am I?* Portland, Oregon: Tibbutt Publishing Company.

Cassidy, K. W., Fineberg, D. S., Brown, K., and Perkins, A. (2005) 'Theory of mind may be contagious, but you don't catch it from your twin', *Child Development*, 76(1), pp. 97-106.

Castiello, U., Becchio, C., Zoia, S., Nelini, C., Sartori, L., Blason, L., D'Ottavio, G., Bulgheroni, M., and Gallese, V. (2010) 'Wired to be social: the ontogeny of human interaction', *PloS one*, *5*(10), p.e13199.

Cheng, Y., Lin, C. P., Liu, H. L., Hsu, Y. Y., Lim, K. E., and Hung, D. (2007) 'Expertise modulates the perception of pain in others', *Current Biology*, 17(19), pp. 1708–1713.

Clark, E. (2011) A Phenomenology of Twinship. Unpublished BA Thesis. Concordia College.

CNN [YouTube] (2013). *The hug that helped change medicine*. [image] Available at: https://www.youtube.com/watch?v=0YwT_Gx49os [Accessed 29 Mar. 2019].

Cohen, D., Dibble, E., Grawe, J. and Pollin, W. (1975) 'Reliably Separating Identical From Fraternal Twins', *Arch Gen Psychiatry*, 32(11), pp. 1371-1375.

Cohen, S. and Taylor, L. (1976) *Escape Attempts: The Theory and Practice of Resistance to Everyday Life*, London: Allen Lane.

Conlon, J. (2009). *One-whole or one-half: A case study of an identical twin' s exploration of personal identity through family perceptions*. Unpublished PhD Thesis. Iowa State University.

Conklin, B. and Morgan, L. (2015) 'Babies, Bodies and the Production of Personhood in North America and Native Amazonian Society', *Ethos*, 24(4), pp.557-694.

Crystal, D. (1987) *The Cambridge Encyclopaedia of Language*. Cambridge: Cambridge University Press.

Crystal, D. (1989) *Listen to your child: a parent's guide to children's language*. [ebook] London: Penguin UK. Available at: https://www.penguin.co.uk/books/11386/listen-to-your-child/9780141927077.html (Accessed 20 Aug. 2017).

Currie, G. (2011) 'Empathy for Objects', in Coplan, A. and Goldie, P. (eds.) *Empathy: Philosophical and Psychological Perspectives*. Oxford: Oxford University Press).

Czyzewska, M., and Lewicki, P. (1993) 'How directly do we know our minds?' *Behavioral and Brain Sciences*, 16(1), pp. 37-38.

Dahlstrom, D.O., Elpidorou, A., and Hopp, W. (2016) *Philosophy of mind and phenomenology: Conceptual and empirical approaches*. New York: Routledge.

Davis, D. (2014) *Twins Talk*. Athens, Ohio: Ohio University Press.

Davis, D., and Davis, D. (2004) 'I-we-me-you-us-them: navigating the hyphens of intersubjectivity among sets of identical twins' Paper presented at the *Annual Meeting of the European Association of Social Anthropology* (Vienna, Austria).

Davis, D., and Davis, D. (2010) 'Dualling Memoires: Twinship and the Disembodiment of Identity', in Collins, P., and Gallinat A. (ed.) *The Ethnographic Self As Resource: Writing Memory and Experience into Ethnography*. New York: Berghahn Books.

Davis, E. A. (1937) 'The development of linguistic skill in twins, sinlgetons, and sibs, and only children from 5-10', *University of Minnesota Institute of Child Welfare,* Monograph 14.

Day, E.J. (1932) 'The development of language in twins: I. A comparison of twins and single children', *Child development, 3*(3), pp. 179-199.

Deneault, J., Ricard, M., Gouin Decarie, T., Morin, P.L., Quintal, G., Boivin, M., Tremblay, R.E. and Pérusse, D. (2008) 'False belief and emotion understanding in monozygotic twins, dizygotic twins and non-twin children', *Cognition & Emotion, 22*(4), pp. 697-708.

Dennett, D. (1991) *Consciousness Explained*. Boston, MA: Little Brown and Company.

Dennett, D. (1992). 'The Self as a Center of Narrative Gravity', in Kessel, F.S., Cole, P.M., and Johnson, D.M. (eds.), *Self and Consciousness: Multiple Perspectives.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Dennett, D. (1978) 'Beliefs about beliefs', *Behavioral and Brain Sciences,* 1(4), pp. 568-570.

DeRoo, N. (2013) 'Phenomenological insights into oppression: Passive synthesis and personal responsibility', *Janus Head* 13(1), pp. 78-96.

De Vignemont, F. (2009) 'Drawing the boundary between low-level and high-level mindreading', *Philosophical Studies, 144*(3), pp. 457-466.

De Vignemont, F., and Singer, T. (2006) 'The empathic brain: how when and why?' *Trends in Cognitive Sciences,* 10(1), 435-441.

De Vignemont, F. (2009) 'Drawing the boundary between low-level and high-level mindreading', *Philosophical Studies, 144*(3), pp. 457-466.

De Vignemont, F. and Jacob, P. (2012) 'What is it like to feel another's pain?' *Philosophy of science,* 79(2), pp. 295-316.

De Vignemont, F., and Jacob, P. (2017) 'Vicarious experiences: perception, mirroring or imagination?' Kiverstein, J. (ed.) *The Routledge Handbook of Philosophy of the Social Mind*. New York: Routledge.

Dickman, Z., & Clark, P. M. (1985) 'Social interaction between a pair of infant twins', *South African Journal of Psychology,* 15(1), pp. 119-125.

DiLalla, L.F. (2006) 'Social development of twins', *Twin Research and Human Genetics, 9*(1), pp. 95-102.

Dillon, K. (2011) *Anxieties of Affiliation: Twinship, Spectacle, and Race in the U.S. Cultural Imaginary*. Unpublished PhD Thesis. Indiana University.

Dillon, M.C. (1997) *Merleau-Ponty's Ontology.* Evanston: Northwestern University Press.

Dolezal, L. (2017) 'Phenomenology and Intercorporeality in the Case of Commercial Surrogacy' in Dolezal, L., and Petherbridge, D. (eds.) *Body/Self/Other: The Phenomenology of Social Encounters*. New York: SUNY Press.

Douglas J.E., and Sutton A. (1978) 'The development of speech and mental processes in a pair of twins: a case study', *Child Psychology and Psychiatry,* 19(1), pp. 49-56.

Dwyer, P. (1990) *Sense and Subjectivity. A Study of Wittgenstein and Merleau-Ponty.*Leiden: Brill.

Dullstein, M. (2013) 'Direct perception and simulation: Stein's account of empathy', *Review of Philosophy and Psychology* 4(2), pp. 333-350.

Esther-Grace. (2011) Comment on; SamanthaMS 'How do you know both twins are moving?' Babycentre. [Online]. Comment posted on 04 April 2011 [Accesed on 05 March 2019]. Available from: https://community.babycentre.co.uk/

Fantham, E. (1968) 'Act IV of the Menaechmi: Plautus and his original'. *Classical Philology*, *63*(3), pp. 175-183.

Farmer, P., (1996) *Two or The book of twins and doubles: an autobiographical anthology*. London: Virago.

Farkas, K. (2008) 'Phenomenal Intentionality without Compromise', *Monist*, 91(2), pp.273-293.

Feldman, R., Eidelman, A.I., Sirota, L., and Weller, A. (2002) 'Comparison of Skin-to-Skin (Kangaroo) and Traditional Care: Parenting Outcomes and Preterm Infant Development' *Pediatrics,* 110 (1), pp. 16-26.

Fernyhough, C. (2012) *Pieces of Light: The new science of memory*. [ebook] London: Proflie Books. Available at: https://profilebooks.com/pieces-of-light.html (Accessed 19 Mar. 2017).

Fisher, J. (1983) *Pedro Pepper and the Cherry Twins.* Loughborough: Ladybird.

Flavell, J. H. (1988) 'The development of children's knowledge about the mind: from cognitive connections to mental representations, in Astington, J., Harris, P., and Olson D.R. (eds.) *Developing theories of mind*. Cambridge: Cambridge University Press.

Frank, C.K. and Temple, E. (2009) 'Cultural effects on the neural basis of theory of mind' *Progress in brain research, 178*, pp. 213-223.

Fricker, M. (2007) *Epistemic injustice: Power and the ethics of knowing*. Oxford University Press.

Friedman, J.A. (2008) *Emotionally Healthy Twins: A New Philosophy for Parenting Two Unique Children.* Boston: Da Capo Press.

Frith, U., and Happé, F. (1999) 'Theory of mind and self-consciousness: What is it like to be autistic?' *Mind & Language,* 14(1), pp.1–22.

Froese, T. and Gallagher, S. (2012) 'Getting interaction theory (IT) together: integrating developmental, phenomenological, enactive, and dynamical approaches to social interaction', *Interaction Studies, 13*(3), pp. 436-468.

Fuchs, T. (2005) 'Delusional mood and delusional perception–a phenomenological analysis', *Psychopathology* 38(3), pp. 133-139.

Fuchs, T. (2009) 'Phenomenology and psychopathology', In Schmicking, D., Gallagher, S. (eds.) *Handbook of phenomenology and cognitive science*. Dordrecht: Springer.

Fuchs, T. and De Jaegher, H. (2009) 'Enactive intersubjectivity: Participatory sense-making and mutual incorporation' *Phenomenology and the Cognitive Sciences*, 8(1), pp. 465–86.

Fuchs, T. (2013a) The phenomenology and development of social perspectives. *Phenomenology and the Cognitive Sciences*, 12(4), pp. 655-683.

Fuchs, T. (2013b) *The Phenomenology of Affectivity.* in Fulford, K., Davies, M., Gipps, R., Graham, G., Sadler, J., Stanghellini, G., and Thornton, T. (eds.) *The Oxford Handbook of Philosophy and Psychiatry.* Oxford: Oxford University Press.

Fuchs, T. (2016) Intercorporeality and Interaffectivity. in Meyer C., Streeck, J., and Jordan S. (eds.) *Emerging socialities in interaction*. Oxford: Oxford University Press.

Gallagher, S. and Meltzoff, A.N. (1996) 'The earliest sense of self and others: Merleau-Ponty and recent developmental studies', *Philosophical Psychology, 9*(2), pp. 211-233.

Gallagher, S. (2000) 'Philosophical conceptions of the self: Implications for cognitive science', *Trends in Cognitive Sciences*, 4 (1), pp. 14–21.

Gallagher, S. (2001) 'The practice of mind. Theory, simulation or primary interaction? *Journal of Consciousness Studies*, *8*(5-6), pp. 83-108.

Gallagher, S. (2003) 'Self-narrative in schizophrenia', in Kircher, T., & David, A. (eds.) *The self in neuroscience and psychiatry*. New York: Cambridge University Press.

Gallagher, S. (2004) 'Understanding interpersonal problems in autism: Interaction theory as an alternative to theory of mind', *Philosophy, Psychiatry, & Psychology, 11*(3), pp. 199-217.

Gallagher, S. (2006a) 'The Narrative Alternative to Theory of Mind', in Menary, R. (ed.) *Radical Enactivism: Intentionality, Phenomenology, and Narrative: Focus on the Philosophy of Daniel D. Hutto.* Amsterdam: John Benjamins Publishing.

Gallagher, S. (2006b) *How the body shapes the mind*. Oxford: Oxford University Press.

Gallagher, S. (2007a) 'Phenomenological and experimental contributions to understanding embodied exxperience', *Cognitive Linguistics Research*, 35(1), pp. 242-270.

Gallagher, S. (2007b) ‘Simulation trouble’, *Social Neuroscience,* 2(3–4). pp. 353–65.

Gallagher, S. and Hutto, D. (2008). Understanding others through primary interaction and narrative practice. In: J. Zlatev, T. Racine, C. Sinha and E. Itkonen (eds). The Shared Mind: Perspectives on Intersubjectivity. Amsterdam: John Benjamins.

Gallagher, S. (2009) ‘Two problems of intersubjectivity’, *Journal of Consciousness Studies, 16*(6-7), pp. 289-308.

Gallagher, S. (ed.), (2011) *The Oxford handbook of the self*. Oxford: Oxford University Press.

Gallagher, S. (2012) ‘Empathy, simulation, and narrative’, *Science in context,* 25(3), pp. 355-381.

Gallagher, S. and Miyahara, K. (2012) ‘Neo-pragmatism and enactive intentionality’, in J. Schulkin, J. (ed.) *Action, perception and the brain*. London: Palgrave Macmillan.

Gallagher, S. and Zahavi, D., (2012) *The phenomenological mind*. New York: Routledge.

Gallagher, S. (2016) ‘The minds of others’, in Dahlstrom, D.O., Elpidorou, A., and Hopp, W. (eds.) *Philosophy of Mind and Phenomenology: Conceptual and Empirical Approaches*. New York: Routledge.

Gallese, V., and Goldman, A. (1998) ‘Mirror Neurons and the Simulation Theory of Mind-Reading’, *Trends in Cognitive Sciences,* 2(12), pp. 493-501.

Gallese, V. (2001) ‘The ‘shared manifold’ hypothesis: From mirror neurons to empathy’, *Journal of Consciousness Studies,* 8(1), pp.33–50.

Gallese, V. (2005) ‘‘Being like me’: Self–other identity, mirror neurons and empathy’, in Hurley S., and Chater, N. (eds) *Perspectives on Imitation*. Cambridge, MA: MIT Press.

Geertz, C. (1974) ‘From the natives point of view: on the nature of anthropological understanding’, *Bulletin of the American Academy of Arts and Social Sciences* 28(1), pp. 26-45

Goldman, A.I. (1989) ‘Interpretation psychologized’, *Mind and Language*, 4(1), pp. 161–185.

Goldman, A. I. (1970). *A Theory of Human Action*. New York: Prentice Hall.

Goldman, A. I. (2000). ‘Folk psychology and mental concepts’, *Protosociology,* 14, pp. 4–25.

Goldman, A.I. (2002) ‘Simulation theory and mental concepts’, in Dokic, J., and Proust J. (eds.), *Advances in consciousness research*. Amsterdam, Netherlands: John Benjamins Publishing Company.

Goldman, A. I. (2005) ‘Imitation, mind reading, and simulation’. in Hurley S., and Chater, N. (eds) *Perspectives on Imitation*. Cambridge, MA: MIT Press.

Goldman, A. I., and Sripada, C. S. (2005) 'Simulationist models of face-based emotion recognition', *Cognition*, 94(3), pp. 193-213.

Goldman, A.I. (2006) *Simulating minds*. Oxford: Oxford University Press.

Goldman, A.I. (2013) *Joint ventures: mindreading, mirroring, and embodied cognition*. Oxford: Oxford University Press.

Gopnik, A. and Wellman, H.M. (1992) 'Why the child's theory of mind really is a theory', *Mind & Language*, 7(1-2), pp. 145-171.

Gopnik, A. (1993) 'How we read our own minds: The illusion of first-person knowledge of intentionality', *Behavioral and Brain Sciences,* 16(1), pp.1–14.

Gopnik, A. (1996). 'Theories and modules: creation myths, developmental realities, and Neurath's boat', in Carruthers P., and, Smith P.K. (eds.) *Theories of theories of mind*. Cambridge: Cambridge University Press.

Gopnik, A. and Meltzoff, A.N. (1997) *Words, Thoughts, and Theories*. Cambridge, MA: MIT Press.

Gopnik, A., and Meltzoff, A.N. (2006) 'Minds, bodies, and persons: Young children's understanding of the self', in Taylor Parker, S., and Mitchell, R.W., (eds.) *Self-awareness in animals and humans: Developmental perspectives*. Cambridge: Cambridge University Press.

Goshen-Gottstein, E. R. (1986) 'On whose needs does mother focus? Mother- or child-centered care and the self-other differentiation of maternal needs', *Psychiatry,* 49(1), pp. 54-68.

Gurwitsch, A. (1979) *Human Encounters in the Social World*. Translated by F. Kersten. Pittsburgh: Duquesne University Press.

Hall, E.T. (1959) *The Silent Language.* New York.: Doubleday and Co.

Hargreaves, R. (1984) *Little Miss Twins*. New York: Penguin Group.

Hay, D.A., Prior, M., Collett, S., and Williams, M. (1987) 'Speech and language development in preschool twins', *Acta geneticae medicae et gemellologiae: twin research, 36*(2), pp. 213-23.

Hay, D.F., Payne, A., and Chadwick, A. (2004) 'Peer relations in childhood', *Journal of child psychology and psychiatry, 45*(1), pp. 84-108.

Hayward, K., Campbell-Yeo, M., Price, S., Morrison, D., Whyte, R., Cake, H. and Vine, J. (2007) 'Co-bedding twins: how pilot study findings guided improvements in planning a larger multicenter trial', *Nursing research, 56*(2), pp. 137-143.

Hayward, K.M., Johnston, C.C., Campbell-Yeo, M.L., Price, S.L., Houk, S.L., Whyte, R.K., White, S.D. and Caddell, K.E. (2015) 'Effect of cobedding twins on coregulation, infant state, and twin safety', *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 44(2), pp. 193-202.

Heinämaa, S. (2014) '" An Equivocal Couple Overwhelmed by Life": A Phenomenological Analysis of Pregnancy', *Philosophia*, 4(1), pp. 31- 49.

Hobson, P. (1993), 'The Emotional Origins of Social Understanding', *Philosophical Psychology*, 6(1), pp. 227–49.

Hobson, P. (2002) *The Cradle of Thought*. Oxford: Oxford University Press.

Hoctor, J.W. (2015) It isn't Mystical, it is Perceptual: An Exploration of Intersubjectivity in Monozygotic Twins. Unpublished MA Thesis. Durham University.

Høffding, S. and Krueger, J. (2016) 'The First Person Perspective and Beyond: Commentary on Almaas', *Journal of Consciousness Studies*, 23(1-2), pp. 158-178.

Howell, L. (2013) *Twinhood: Sense of self and identity*. Available at: https://www.psychotherapyexcellence.com/ (Accessed 19 Nov. 2016).

Hughes, C., and Cutting, A.L. (1999) 'Nature, nurture, and individual differences in early understanding of mind', *Psychological Science, 10*(5), pp. 429-432.

Hughes, C., Jaffee, S. R., Happe´, F., Taylor, A., Caspi, A., and Moffitt, T. E. (2005) 'Origins of individuals differences in theory of mind: From nature to nurture?' *Child Development*, 76(1), pp. 356-370.

Husserl, E. (1950) 'Cartesianische Meditationen und Pariser Vorträge', Strasser, S. (ed.) *Husserliana I.* The Hague: Martinus Nijhoff. Trans. in part by Koestenbaum, P. (1964) *The Paris Lectures*. The Hague: Martinus Nijhoff; and in part by Cairns, D. (1999) as *Cartesian Meditations: An Introduction to Phenomenology*. The Hague: Martinus Nijhoff.

Husserl, E. (1964) *On the Phenomenology of the Consciousness of Internal Time*. Translated by J. S. Churchill. Bloomington: Indiana University Press.

Husserl, E., (1970) *The crisis of European sciences and transcendental phenomenology: An introduction to phenomenological philosophy*. Evanston: Northwestern University Press.

Husserl, E. (1973a) '*Zur Phänomenologie der Intersubjektivität: Texte aus dem Nachlass, vol. i, 1905–1920'*, in Husserliana 13, Kern, I. (ed.). The Hague: Martinus Nijhoff.

Husserl, E. (1973b). *Experience and Judgment: Investigations in a Genealogy of Logic*. Translated by L. Landgrebe, L. Evanston: Northwestern University Press.

Husserl, E. (1982a) *Cartesian Meditations: an Introduction to Phenomenology*. Translated by D. Cairns. The Hauge: M. Nijhojf Publishers.

Husserl, E. (1982b) *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy—First Book: General Introduction to a Pure Phenomenology*, translated by F. Kersten. The Hague: Nijhoff.

Husserl, E. (1983) *Ideas: General Introduction to Pure Phenomenology*. Translated by F. Kersten. The Hauge: M. Nijhojf Publishers.

Husserl, E. (2001) *Analyses Concerning Passive and Active Synthesis: Lectures on Transcendental Logic*. Translated by A.J. Steinbock. Alphen aan den Rijn: Kluwer Academic Publishers.

Husserl, E. (2002) 'Zur pha¨nomenologischen Reduktion. Texte aus dem Nachlass (1926–1935)', in S. Luft (ed.) *Husserliana Band XXXIV.* Alphen aan den Rijn: Kluwer Academic Publishers.

Husserl, E. (2006) *The basic problems of phenomenology: From the lectures, winter semester, 1910-1911*. Berlin: Springer Science & Business Media.

Husserl, E. (2008) '*Die Lebenswelt. Auslegungen der vorgegebenen Welt und ihrer Konstitution. Texte aus dem Nachlass (1916-1937)', in Grzegorz Malinowski, Ks. (ed.) Husserliana Band XXXIX*. Dordrecht: Springer.

Husserl, E. (2012) *Logical investigations*. New York: Routledge.

Husserl, E. (2013) *Transzendentaler Idealismus: Texte aus dem Nachlass (1908–1921)*. Dordrecht: Springer-Verlag.

Hutto, D.D. (2008a) *Folk psychological narratives: The sociocultural basis of understanding reasons.* Cambridge, MA: MIT Press.

Hutto, D.D. (2008b) 'The Narrative Practice Hypothesis: Clarifications and implications', *Philosophical Explorations*, 11 (3), pp. 175–92.

Ingarden, R. (1994) *Frühe Schriften zur Erkenntnistheorie*. Tübingen: Max Niemeyer.

Ikier, S., Tekcan, A.I., Guelgoez, S. & Kuentay, A. (2003) 'Whose life is it anyway? Adoption of each other's autobiographical memories by twins', *Applied Cognitive Psychology*, 17(2), pp. 237-247.

Jacob, P. (2011), 'The Direct-Perception Model of Empathy: A Critique', *Review of Philosophy and Psychology*, 2(3), pp. 519–540.

Jardine, J. (2014) 'Husserl and Stein on the phenomenology of empathy: perception and explication', *Synthesis Philosophica,* 29 (2), pp. 273-288.

Jardine, J. (2015) 'Stein and Honneth on empathy and emotional recognition', *Human Studies*, 38(4), pp. 567-589.

Jardine, J., and Szanto, T. (2017) 'Empathy in the phenomenological tradition', in Maibom, H. (ed.) *The Routledge handbook of philosophy of empathy*. New York: Routledge.

Jeannerod, M., and Pacherie, E. (2004) 'Agency, Simulation and Self-Identification', *Mind and Language*, 19(2), pp. 113–146.

Joseph, E. and Tabor, D. (1961) 'The simultaneous analysis of a pair of identical twins and the twinning reaction', *The Psychoanalytic Study of the Child*, 16(1), pp. 275-299.

Joseph, J. (2001) 'Separated twins and the genetics of personality differences: A critique'. *The American journal of psychology*, *114*(1), pp. 1-30.

Joseph, J., (2004) *The gene illusion: Genetic research in psychiatry and psychology under the microscope*. New York: Algora Publishing.

Joseph, J., (2015) *The trouble with twin studies: A reassessment of twin research in the social and behavioral sciences*. New York: Routledge.

Kafka, F. (1974) *The Castle*. London: Penguin Classics.

Kamin, L.J. (1974) *The science and politics of IQ*. New York: Psychology Press.

KarenM10. (2011) Comment on; SamanthaMS 'How do you know both twins are moving?' *Babycentre*. [Online]. Comment posted on 04 April 2011 [Accesed on 05 March 2019]. Available from: https://community.babycentre.co.uk/

Karns, J., & Fogel, A. (1990) *Sequential organization of mother-twin infant interaction.* Poster presented at the Seventh International Conference on Infant Studies. Montreal, Canada.

Kemp, S., Burt, C.D.B. & Sheen, M. (2003) 'Remembering dreamt and actual experiences', *Applied Cognitive Psychology*, 17(5), pp. 577–591.

Keysar, B., Lin, S., and Barr, D. (2003) 'Limits on theory of mind use in adults', *Cognition*, 89(2), pp. 25–41.

Klaus, M. &. Kennell, J. (1979) 'Early mother-infant contact. Effects on the mother and the infant', *Bulletin of the Menninger Clinic*, 43(1), pp. 69-78.

Klaus, M. H. and Kennell, J. H. (1981*) Parent-infant bonding*. St Louis: C.V. Mosby.

Klaus, M. H. and Kennell, J. H. (1983) *Bonding: The beginnings of parent-infant attachment*. St Louis: C.V. Mosby.

Klaus, M. H. and Kennell, J. H. (1998) 'Bonding: Recent Observations That Alter Perinatal Care', *Pediatrics in Review*, 19(1), pp. 4-12.

Knatchbull, T. (2011) *From a Clear Blue Sky*. London: Random House.

Koch, H. (1966) *Twins and Twin relations*. Chicago: University of Chicago Press.

Kohl, S. (2001) *Twin stories*. Berkeley: Wildcat Canyon Press.

Kovács, Á., Kühn, S., Gergely, G., Csibra, G., and Brass, M. (2014). 'Are all beliefs equal? Implicit belief attributions recruiting core brain regions of theory of mind', *PLoS One*, e106558.

Kovács, Á., Téglás, E., and Endress, A. (2010), 'The social sense: Susceptibility to others' beliefs in human infants and adults', *Science*, 330(2), pp. 1830–1834.

Kozlak, J.B. (1978) 'Identical twins: perceptions of the effects of twinship',

*Humboldt Journal of Social Relations* 5(2): 105–30.

Krueger, J. (2011) 'The who and the how of experience', in Siderits, M., Thompson, E. & Zahavi, D. (eds.) Self, *No Self? Perspectives from Analytical, Phenomenological, and Indian Tradition*s. Oxford: Oxford University Press.

Krueger, J. (2012) 'Seeing mind in action', *Phenomenology and the Cognitive Sciences*, 11(2). pp. 149-173.

Krueger, J. (2013a) 'Empathy', in Kaldis, B. (ed.) *Encyclopedia of Philosophy and the Social Sciences*. Thousand Oaks, CA: Sage Publications.

Krueger, J. (2013b) 'Merleau-Ponty on shared emotions and the joint ownership thesis', *Continental Philosophy Review, 46*(4), pp. 509-531.

Krueger, J. (2014) 'The Phenomenology of Person Perception' in Bruhn, M., and Wehrs, D. (eds.) *Neuroscience, Literature, and History*. New York: Routledge.

Küntay, A.C., Gülgöz, S. and Tekcan, A.İ., (2004) 'Disputed memories of twins: how ordinary are they?', *Applied Cognitive Psychology, 18*(4), pp. 405-413.

La Fontaine, J. (1985) 'Person and individual in anthropology' in Carrithers, M., and Lukes, S. (eds.) *The Category of the Person*. Cambridge: Cambridge University Press.

Landes, D.A. (2012) 'Translators Introduction', in Merleau-Ponty, M. (author.) *Phenomenology of Perception*. New York: Routledge.

Lavelle, J. S. (2012) 'Theory-Theory and the Direct Perception of Mental States', *Review of Philosophy and Psychology*, 3(2), pp. 213–30.

Lefort, C. (1990) 'Flesh and otherness', in Johnson G.A. and Smith, M.B. (eds.) *Ontology and alterity: Alterity in Merleau-Ponty*. Evanston: Northwestern University Press, 1990.

Leonard, M. (1961) 'Problems in Identification and Ego Development in Twins', *The Psychoanalytic Study of the Child*, 16(1), pp. 300-320.

Lerum, C.W., N.C. Major and, LoBiondo-Wood, G. (1989) 'The relationship of maternal age, quickening, and physical symptoms of pregnancy to the development of maternal–fetal attachment', *Birth*, 16(1), pp. 13–17.

Leslie, A.M., (1987) 'Pretense and representation: The origins of theory of mind', *Psychological review*, 94(4), pp. 412-426.

Leslie, A. M. (1994) 'ToMM, ToBy, and Agency: Core architecture and domain specificity', in Hirschfeld, L.A., and Gelman, S.A. (eds.) *Mapping the mind: Domain specificity in cognition and culture*. Cambridge: Cambridge University Press.

Lewin, V. (2014) *The twin in the transference*. London: Karnac Press.

Lewin, V. (2016). *The Twin Enigma: An Exploration of Our Enduring Fascination with Twins*. London: Karnac Books.

Lévinas, E. (1969) *Totality and infinity*. Pittsburgh, Pennsylvania: Duquesne University Press.

Lin, S., Keysar, B., and Epley, N. (2010) 'Reflexively mindblind: Using theory of mind to interpret behavior requires effortful attention', *Journal of Experimental Social Psychology, 46(1),* pp. 551–556.

Loehlin, J.C. and R.C. Nichols (1976) *Heredity, Environment and Personality: A Study of 850 Sets of Twins.* Austin: University of Texas Press.

Løkken, G. (2000). Tracing the social style of toddler peers. *Scandinavian Journal of Educational Research*, 44(1), pp. 163–167.

Luria A.R., Yudovich F.I. (1959) *Speech and the Development of Mental Processes in the Child*. London: Staples Press.

Lymer, J.M. (2010) *The Phenomenology of the Maternal-Foetal Bond.* Unpublished PhD Thesis. University of Wollongong.

Lymer, J.M. (2011) 'Merleau-Ponty and the Affective Maternal-Foetal Relation', *Parrhesia*, 13(1), pp. 126-143.

Lytton, H. (1980) *Parent–Child Interaction. The Socialization Process Observed in Twin and Singleton Families.* New York: Plenum Press.

Macfarlane, A. (1978) *The Origins of English Individualism*. Cambridge: Cambridge University Press.

MacIntyre, A. (1981) *After Virtue: a study in moral theory*. London: Duckworth.

Maddox, B. (2006) *Blinded by Science: Troubled in Twin Town*. Available at: http://discovermagazine.com/ (Accessed: 4 Apr. 2017).

Madison, G.B. (1981) *The Phenomenology of Merleau-Ponty.* (Athens, Ohio: Ohio University Press.

Mallory, J. and Adams, D. (1997) *Encyclopaedia of Indo-European culture*. London: Fitzroy Dearborn.

Marraffa, M. (2012) *Theory of Mind*. Available at: http://www.iep.utm.edu/theomind/ (Accessed 18 Aug. 2017).

Maratos, O. (1982) 'Trends in the development of imitation in early infancy', in Bever, T.G. (ed.), *Regressions in Mental Development: Basic Phenomena and Theories*, Hillsdale, NJ: Erlbaum.

McAdams, D.P. (1993) *The stories we live by: Personal myths and the making of the self*. New York: Guilford Press.

McAdams, D.P. (2006) 'The role of narrative in personality psychology today', *Narrative Inquiry*, 16(1), pp. 11-18.

McAdams, D.P. (2008) 'Personal Narratives and the Life Story' in Johns, O., Robins, R., and Pervin, L. (eds.) *Handbook of Personality; Theory and Research*. New York: Guildford Press.

McIlroy, E.C. (2012) ‘One half living for two: Cross-cultural paradigms of twinship and twin loss’ *OMEGA-Journal of Death and Dying*, 64(1), pp. 1-13.

Meltzoff A. N., and Moore, M. K. (1977) ‘Imitation of facial and manual gestures by human neo-nates’, *Science*, 198, pp.74-78.

Meltzoff, A. N., and Moore, M. K. (1983) ‘Newborn infants imitate adult facial gestures’, *Child Development*, 54, pp. 702-709.

Meltzoff, A.N. (1995) ‘Understanding the Intentions of Others: Re-enactment of intended acts by 18-month-old children’, *Developmental Psychology*, 31(2), pp. 838–50.

Meltzoff, A. N., and Moore, M. K. (1997) ‘Explaining facial imitation: A theoretical model’, *Early Development & Parenting*, 6(3-4), pp. 179-192.

Meltzoff, A. N., and Brooks, R. (2001) ‘’Like me’ as a building block for understanding other minds: Bodily acts, attention, and intention.’, in Malle, B. F., Moses, L.J., and Baldwin, D.A. (eds.) *Intentions and intentionality: Foundations of social cognition*. Cambridge, MA: MIT Press.

Merleau-Ponty, M. (1962). *Phenomeology of Perception,* trans. C. Smith. London: Routledge and Kegan Paul.

Merleau-Ponty, M. (1964a) ‘The Child's Relation with Others’, in James M. Edie (ed.) *The Primacy of Perception*. Evanston: Northwestern University Press.

Merleau-Ponty, M. (1964b) *Signs*. Evanston: Northwestern University Press.

Merleau-Ponty, M. (2000) *Nature: course notes from the Collège de France*. Evanston: Northwestern University Press.

Merleau-Ponty, M. (2010) *Child psychology and pedagogy: The Sorbonne lectures 1949-1952*. Translated by T. Welsh. Evanston: Northwestern University Press.

Merleau-Ponty, M. (2012) *Phenomenology of Perception*. Translated by D.A. Landes. New York: Routledge.

Moran, D. (2000) *Introduction to Phenomenology*. London: Routledge.

Moran D. (2002) ‘Making sense: Husserl’s phenomenology as transcendental idealism’ in Malpas, J. (ed.) *From Kant to Davidson: philosophy and the idea of the transcendental*. London: Routledge.

Moran, D. (2004) ‘The problem of empathy: Lipps, Scheler, Husserl and Stein’, in McEvoy, J.J., Kelly, T.A.F., and Rosemann, P. (eds.) *Amor amicitiae: on the love that is friendship. Essays in medieval thought and beyond in honor of the Rev. Professor James McEvoy.* Leuven: Dudley, MA.

Moran, D. (2010) ‘Husserl and Merleau-Ponty on embodied experience’, in Nenon, T., and Blosser, P. (eds.) *Advancing Phenomenology*. Dordrecht: Springer.

Morris, D. (1985) *Bodywatching*. London: Jonathan Cape.

Moses, B. (1993) ‘Twins’, in Foster, J (ed.) *Twins Poems.* Oxford: Oxford University Press.

Neimark, J. (1997) *Nature's Clone.* Available at: https://www.psychologytoday.com/ (Accessed 24 Oct. 2016).

Neisser, U., (1988) ‘Five kinds of self-knowledge’, *Philosophical psychology*, *1*(1), pp. 35-59.

NHS.UK. (2019). *Twins and language*. [online] Available at: https://www.nhs.uk/conditions/pregnancy-and-baby/language-and-twins/ [Accessed 3 Mar. 2019].

Nichols, S. and Stich, S. (2004) ‘Reading one's own mind: Self-awareness and developmental psychology’, *Canadian Journal of Philosophy*, *34*(1), pp. 297-339.

O'Donohue, B. (2017). *Neptune*. [email].

Oksala, J. (2003) ‘The Birth of Man’, in Zahavi, D., and Heinämaa, S. (eds.) *Metaphysics, Facticity, Interpretation: Phenomenology in the Nordic Countries.* Dordrecht: Kluwer.

Olkowski, D. (2006) ‘Only Nature Is Mother to the Child’, in Olkowski, D., and Weiss, D., (eds.) *Feminist Interpretations of Maurice Merleau-Ponty*. Pennsylvania: The Pennsylvania State University Press.

Ortmeyer, D. (1970) ‘The We-Self of Identical Twins’. *Contemporary Psychoanalysis*, 6(2), pp. 125-142.

Overgaard, S. (2017) ‘Merleau-Ponty and Wittgenstein on Mindreading: Exposing the Myth of the Given Mind’, in Romdenh-Romluc, K. (ed.) *Wittgenstein and Merleau-Ponty*. New York: Routledge.

Pearlman, E.M., and Ganon, J.A. (2000) *Raising Twins: From Birth Through Adolescence.* New York: HarperCollins.

Pector, E. A. (2002) ‘Twin death and mourning worldwide: A review of the literature’ *Twin Research*, 5(3), 196-205.

Peterson, C. C. (2000) ‘Kindred spirits. Influences of siblings’ perspectives on theory of mind’, *Cognitive Development*, 15(1), pp. 435-455.

Phillips, W., S. Baron-Cohen, and M. Rutter. 1992. The role of eye-contact in the detection of goals: Evidence from normal toddlers, and children with autism or mental handicap. *Development and Psychopathology* 4:375–83.

Piontelli, A., Bocconi, L., Kustermann, A., Tassis, B., Zoppini, C. and Nicolini, U. (1997) ‘Patterns of evoked behaviour in twin pregnancies during the first 22 weeks of gestation’, *Early human development*, *50*(1), pp. 39-45.

Piontelli, A., Bocconi, L., Boschetto, C., Kustermann, A. and Nicolini, U. (1999) ‘Differences and similarities in the intra-uterine behaviour of monozygotic and dizygotic twins’, *Twin Research and Human Genetics*, *2*(4), pp. 264-273.

Piontelli, A. (2002) *Twins: From Foetus to Child*. London: Routledge.

Piontelli, A. (2008) *Twins in the World: the legends they inspire and the lives they lead*. London: Springer.

Pulkkinen, S. (2013) 'Lifeworld as an Embodiment of Spiritual Meaning: The Constitutive Dynamics of Activity and Passivity in Husserl', in Jensen, R.T., and Moran, D. (eds.) *The Phenomenology of Embodied Subjectivity*. Dordrecht: Springer.

Prainsack, B., and Spector, T.D. (2006) 'Twins: A Cloning Experience', *Social Science & Medicine* 63(10), p. 2739-2752.

Premack, D., and Woodruff, G. (1978) 'Does the chimpanzee have a theory of mind?' *Behavioral and Brain Sciences*,1(1), pp. 512-526.

Ratcliffe, M.J. (2007) *Rethinking Commonsense Psychology: A Critique of Folk Psychology, Theory of Mind and Simulation.* Basingstoke: Palgrave Macmillan.

Ratcliffe, M.J. (2013a) 'The phenomenology of depression and the nature of empathy', *Medicine, Health Care and Philosophy*, 17(2), pp. 269-280.

Ratcliffe, M.J. (2013b) 'Phenomenology, naturalism and the sense of reality' *Royal Institute of Philosophy Supplements*, 72(1), pp. 67-88.

Reddy, V. (2008), *How Infants Know Minds.* Cambridge, MA: Harvard University Press.

Reuter, M. (1999) 'Merleau-Ponty's notion of pre-reflective intentionality', *Synthese*, 118(1), pp. 69-88.

Rice, M.L., Zubrick, S.R., Taylor, C.L., Hoffman, L. and Gayán, J. (2018) 'Longitudinal study of language and speech of twins at 4 and 6 years: twinning effects decrease, zygosity effects disappear, and heritability increases', *Journal of Speech, Language, and Hearing Research*, *61*(1), pp. 79-93.

Ricoeur, P. (1988) 'L'identité narrative', *Esprit* (7–8), pp. 295–304.

Ricoeur, P. (1990a) *Time and Narrative*, (Vol. 1). Chicago: University of Chicago Press.

Ricoeur, P. (1990b) *Time and Narrative*, (Vol. 2). Chicago: University of Chicago Press.

Ricoeur, P. (1990c) *Time and narrative* (Vol. 3). Chicago: University of Chicago Press.

Ricoeur, P. (1991) 'Narrative identity', *Philosophy today*, 35(1), pp. 73-81.

Ricoeur, P. (1992) *Oneself as another*. Chicago: University of Chicago Press.

Robin, M., Josse, D., Casati, I., Kheroua, H. and Tourrette, C. (1994) 'Dress and physical environment of twins at 1 year: French mothers' attitudes and practices', *Journal of Reproductive and Infant Psychology*, 12(4), 241-248.

Robbins, P. (2006) 'The ins and outs of introspection', *Philosophy Compass*, 1(6), pp. 617-630.

Robinson, E.J. and Mitchell, P. (1995) 'Masking of children's early understanding of the representational mind: Backwards explanation versus prediction', *Child Development*, 66(4), pp.1022-1039.

Rochat, P. (2004) 'Emerging co-awareness', in Bremner, G., and Slater, A. (ed.) *Theories of Infant Development*. New York: Wiley-Blackwell.

Rochat, P., Passos-Ferreira, C. and Salem, P. (2009) Three levels of intersubjectivity in early development, in Carrassa, A., Morganti, F., and Riva, G. (eds.) *Enacting intersubjectivity: Paving the way for a dialogue between cognitive science, social cognition and neuroscience*. Amsterdam: IOS press.

Ross, H. (1982) Establishment of social games among toddlers. *Developmental Psychology*, 18(1), pp. 509-518.

Röska-Hardy, L. (2009). 'Theory Theory (Simulation Theory, Theory of Mind)', in Squire, L.R. (ed.) *Encyclopedia of Neuroscience*. Amsterdam: Elsevier.

Rostand, J. (1971) *Larousse Science of Life: a study of biology, sex, genetics, heredity and evolution*. London: Hamlyn.

Rovane, C. (1998) *The Bounds of Agency*. Princeton: Princeton University Press.

Rudd, A. (2012) *Self, value, and narrative: A Kierkegaardian approach*. Oxford: Oxford University Press.

Ryle, G. (1949) *The Concept of Mind.* Chicago: University of Chicago Press.

Sacks, O. (2007) *Musicophilia: Tales of Music and the Brain*. London: Picador

Sadri, M. and Sadri, A. (1994) 'Doppelganger: Twins' disruption of the assumptions of constancy and uniqueness of self in everyday life', *Symbolic Interaction*, *17*(2), pp. 203-223.

Safyer, A.W. (1994) 'Ego psychology theory and practice'. *Child and Adolescent Social Work Journal*, *11*(4), pp. 343-346.

Sandbank, A.C. (1988) 'The effect of twins on family relationships', Acta *geneticae medicae et gemellologiae: twin research*, 37 (2), pp. 161-171.

Sandbank, A.C. (1999) *Twin and Triplet Psychology: A Professional Guide to Working with Multiples.* London: Routledge.

Sasaki, M., Yanagihara, T., Naitoh, N. and Hata, T. (2010) 'Four-dimensional sonographic assessment of inter-twin contact late in the first trimester', *International Journal of Gynecology & Obstetrics*, *108*(2), pp. 104-107.

Sass, L.A. & Parnas, J. (2003) 'Schizophrenia, consciousness, and the self', *Schizophrenia Bulletin*, 29 (3), pp. 427–444.

Savic, S. (1980) *How Twin Learn to Talk: A Study of the Speech Development of Twins from 1 to 3*. London: Academic Press.

Schave, B., & Ciriello, J. (1983) *Identity and Intimacy in Twins*. New York: Praeger Publishers.

Schave-Klein, B. (2003) *Not All Twins Are Alike: Psychological Profiles of Twinship*. Westport, CT: Praeger.

Schechtman, M. (1996) *The Constitution of Selves*. New York: Cornell University Press.

Schechtman, M. (2011) 'The Narrative Self', in Gallagher, S. (ed.) *The Oxford Handbook of the Self*. Oxford: Oxford University Press.

Scheler, M. (1954) *The Nature of Sympathy*. translated by P. Heath. New York: Archon Books.

Scheler, M. (2008) *The Nature of Sympathy*. London: Transaction.

Scheler, M. (2017) *The Nature of Sympathy*. translated by G. McAleer. New York: Routledge.

Schilbach, L., Eickhoff, S.B., Mojzisch, A. and Vogeley, K. (2008) 'What's in a Smile? Neural correlates of facial embodiment during social interaction', *Social Neuroscience*, 3 (1), pp. 37–50.

Schües, C. (2000) 'Empirical and Transcendental Subjectivity: An Enigmatic Relation', in Gupta, B. (ed.) *Empirical and Transcendental: A Fusion of Horizons*. Lanham: Rowman and Littlefield.

Schües, C. (1997) 'The Birth of Difference', *Human Studies* 20(1), pp. 243–52.

Schutz, A. (1967) *Phenomenology of the Social World*. Evanston, Illinois: Northwestern University Press.

Schwitzgebel, E. (2010). 'Introspection' in Zalta, E.N. (ed.) *The Stanford Encyclopedia of Philosophy. Available at: https://plato.stanford.edu/entries/introspection/ (accessed 20 August 2017).*

Segal, N.L. (1984) 'Cooperation, competition and altruism within twin sets: A reappraisal', *Ethology and Sociobiology,* 5(1), pp. 163–177.

Sellars, W. (1956) 'Empiricism and the Philosophy of Mind', *Minnesota studies in the philosophy of science, 1*(19), pp. 253-329.

Senju, A., Csibra, G. and Johnson, M.H. (2008) 'Understanding the referential nature of looking: Infants' preference for object-directed gaze', *Cognition*, *108*(2), pp. 303-319.

Senju, A., Johnson, M.H. & Csibra, G. (2006) 'The Development and Neural Basis of Referential Gaze Perception', *Social Neuroscience*, 1 (3–4), pp. 220–34.

Shakespeare, W. (2016) *The Comedy of Errors: Third Series*. Bloomsbury Publishing.

Shaffer, D. (2008). *Social and personality development*. Pacific Grove, Calif.: Brooks/Cole Pub. Co.

Sheen, M., Kemp, S. & Rubin, D.C. (2001) 'Twins dispute memory ownership: a new false memory phenomenon' *Mem Cognit*, 29(6), pp. 779-88.

Sheen, M. (2002). *Stealing the past: disputed memories in twins*. Unpublished PhD Thesis. University of Canterbury.

Sheen, M., Kemp, S. and Rubin, D.C. (2006) 'Disputes over memory ownership: What memories are disputed?' *Genes, Brain and Behavior, 5*(S1), pp. 9-13.

Sheets-Johnstone, M. (1999) 'Emotion and movement. A beginning empirical-phenomenological analysis of their relationship', *Journal of Consciousness Studies* 6 (2), pp. 259-277.

Sheldrake, R. (2002) 'Foreword', in Lyon Playfair, G. *Twin Telepathy: The Psychic Connection*. London: Vega.

Shildrick, M. (2002) *Embodying the monster*. London: Sage.

Sipes, N. J., and Sipes, J. S., (1998) *Dancing Naked in Front of the Fridge and Other Lessons from Twins*. Vancouver, British Columbia: FairWinds Press.

Smith, A.D. (2007) 'The flesh of perception: Merleau-ponty and Husserl', in Baldwin, T. (ed.), *Reading Merleau-Ponty: On Phenomenology of Perception*. New York: Routledge.

Sokolowski, R. (1964) *The Formation of Husserl's Concept of Constitution*. The Hague: Martinus Nijhoff.

Spaulding, S. (2010), 'Embodied Cognition and Mindreading', Mind and Language, 25/1: 119–40.

Spurling, L. (2013) *Phenomenology and the social world: The philosophy of Merleau-Ponty and its relation to the social sciences*. New York: Routledge.

Smith, R. (Joyce Carol Oates) (1987) *Lives of the Twins*. New York: Simon and Schuster.

Stanghellini, G. and Rosfort, R. (2013) *Emotions and personhood: exploring fragility-making sense of vulnerability*. Oxford: Oxford University Press.

Stein, H. (1978). *Parallels: A Look at Twins*. New York: E.P. Dutton.

Stein, E. (1989) *On the Problem of Empathy*. Translated by W. Stein. The Hauge: Martinus Nijhoff,

Stein, E. (2008) *Zum Problem der Einfühlung*. Freiburg im Breisgau: Verlag Herder.

Steinbock A.J. (2004) ‘Affection and Attention: On the phenomenology of becoming aware’, *Continental Philosophy Review*, 37(1): pp. 21-43.

Stewart, E. (2005) *Towards a Social Analysis of Twins*. Basingstoke: Palgrave Macmillan.

Stueber, K.R. (2006) *Rediscovering Empathy: Agency, Folk-Psychology and the Human Sciences*. Cambridge MA: MIT Press.

Stueber, K.R. (2012) ‘Varieties of empathy: Neuroscience and the narrativist challenge to the contemporary theory of mind debate’, *Emotion Review* 4(1), pp. 55–63

Straus, E. (1963) *The Primary World of Senses.* Translated by J. Needleman. London: The Free Press of Glencoe.

Summa, M. (2018) ‘Empathy and Anti-Empathy: Which Are the Problems?’, in Magri, E., and Moran, D. (eds.) *Empathy, Sociality, and Personhood*. Dordrecht: Springer.

Surtees, A., and Apperly, I. (2012) ‘Egocentrism and automatic perspective-taking in children and adults’, *Child Development, 83(1),* pp. 452–460.

Surtees, A., Butterfill, S., and Apperly, I. (2012) ‘Direct and indirect measures of Level-2 perspective-taking in children and adults’, *British Journal of Developmental Psychology, 30(2),* pp. 75–86.

Svenaeus, F. (2016) ‘The phenomenology of empathy: A Steinian emotional account’, *Phenomenology and the Cognitive Sciences* 15(2), pp. 227-245.

Svenaeus, F. (2018) ‘Edith Stein’s Phenomenology of Empathy and Medical Ethics’, in Magri, E., and Moran, D. (eds.) Empathy, Sociality, and Personhood. Dordrecht: Springer.

Szanto, T. and Moran, D. (2015) ‘Introduction: Empathy and collective intentionality—the social philosophy of Edith Stein’, *Human Studies*, 38(4), pp. 445–461.

Tamba.org.uk. (2019). *Language Development amongst twins, triplets or more - TAMBA*. [online] Available at: https://www.tamba.org.uk/Parenting/Preschool-Years/Language [Accessed 3 Jan. 2019].

Taylor, C. (1989) *Sources of the self*. Cambridge: Cambridge University Press.

Taylor, C. (2004) *Modern Social Imaginaries*. Durham: Duke University Press.

Tengelyi, L. (2012) ‘Action and selfhood: a narrative interpretation’, in Zahavi, D. (ed.) *The Oxford Handbook of Contemporary Phenomenology*. Oxford: Oxford University Press

Terry, G.E. (1975) ‘The separation-individuation process in same sex twins: a review of the literature’, *Maternal-Child Nursing,* 4 (2), pp. 121-128.

Thorpe, K. J., Golding, J., MacGillivray, I., and Greenwood, R. (1991) ‘Comparison of prevalence of depression in mothers of twins and mothers of singletons’, *British Medical Journal*, 302(2), pp. 875-878.

Thorpe, K. J., Rutter, M., & Greenwood, R. (2003) 'Twins as a natural experiment to study the causes of mild language delay: II: Family interaction risk factors', *Journal of Child Psychology and Psychiatry,* 44(2), pp. 342-355.

Tomasello, M., Mannie, S., and Kruger, A. C. (1986) 'Linguistic environment of 1- to 2-year old twins', *Developmental Psychology,* 22 (2), pp. 169-176.

Trevarthen, C.B. (1979) 'Communication and Cooperation in Early Infancy: A description of primary intersubjectivity', in Bullowa, M. (ed.), *Before Speech*. Cambridge: Cambridge University Press.

Trevarthen, C. and Hubley, P. (1978) 'Secondary Intersubjectivity: Confidence, confiding and acts of meaning in the first year', in Lock, A. (ed.), A*ction, Gesture and Symbol: The Emergence of Language*. London: Academic Press).

Turner, V. (1969) *The ritual process. structure and anti-structure.* Chicago: Aldine.

Turner, B.S. (1986) 'Personhood and citizenship', *Theory Culture and Society,* 2(1), pp. 1–16.

Uhlhaas, P.J., and Mishara. A.L. (2006) 'Perceptual anomalies in schizophrenia: integrating phenomenology and cognitive neuroscience', *Schizophrenia Bulletin* 33(1), pp. 142-156.

YouTube. (2017). *Twins acting out scene from Frozen*. [online] Available at: https://www.youtube.com/watch?v=ym1Umb_mreQ [Accessed 3 Sep. 2019].

Van der Zalm, J.E. (1999) *Having Twins: The Experience of Mothers.* Unpublished PhD Thesis. University of Alberta.

Viney, W. (2013) *Twin intimacies*. Available at: https://thewonderoftwins.wordpress.com/ (Accessed 4 Apr. 2017).

Viney, W. (2013) *The Significance of Twins in the Middle Ages*. Available at: https://thewonderoftwins.wordpress.com/ (Accessed 4 Apr. 2017).

Walker, A.S. (1982) 'Intermodal perception of expressive behaviors by human infants', *Journal of Experimental Child Psychology*, 33(3), pp. 514-535.

Walker, H., Messinger, D., Fogel, A. and Karns, J. (1992) 'Social and communicative development in infancy', in Van Hasselt, V.B., and Hersen, M. (eds.) *Handbook of Social Development*. Boston, MA: Springer.

Wellman, H.M., Cross, D. and Watson, J. (2001) 'Meta-analysis of theory-of-mind development: The truth about false belief', *Child Development* 72(2), pp. 655–684.

Welton, D. (2000) *The Other Husserl: The Horizons of Transcendental Phenomenology*. Bloomington: Indiana University Press.

Welty, E. (1947) *The Golden Apples*. San Diego: Harcourt, Brace & Company.

Weiss, G. (2009) 'Intertwined Identities', in Van de Vall, R., and, Zwijnenberg R (eds.) *The Body Within: Art, Medicine and Visualization*. Leiden, Netherlands: Brill.

Wiggins, O. P., Schwartz, M. A., and Northoff, G. (1990) 'Toward a Husserlian phenomenology of the initial stages of schizophrenia', in Spitzer, M., and Maher., B.A. (eds.) *Philosophy and psychopathology*. Dordrecht: Springer.

Wiggins, O.P., and Schwartz, M.A. (2007) 'Schizophrenia: a phenomenological-anthropological approach', in Chung, M.C., and Fulford, K. W. M. (eds.) *Reconceiving schizophrenia*. Oxford: Oxford University Press.

Wilson, J. (1995) *Double Act.* London: Doubleday.

Wilson, R. and E.B. Harpring (1972) 'Mental and motor development in infant twins', *Developmental Psychology,* 7(1), pp. 277–287.

Wilson, R. (1974) 'Twins: Mental development in the preschool years', *Developmental Psychology,* 10(1), pp. 580– 588.

Wilson, R. (1975) 'Twins: Patterns of cognitive development', *Developmental Psychology,* 11(1), pp. 126–134.

Wilson, R. (1986) 'Twins: Genetic influence on growth,' in Malina, R.M., and Bouchard, C. (eds.) *Sports and Human Genetics*. Champaign, Ill.: Human Kinetics.

Wimmer, H., and Perner, J. (1983) 'Beliefs about beliefs: representation and the containing function of wrong beliefs in young children's understanding of deception', *Cognition,*13(1), pp.103-128.

Wimmer, H., and Weichbold, V. (1994) 'Children's theory of mind: Fodor's heuristics examined', *Cognition,* 53(1), pp. 45-57.

Wittgenstein, L. (1980a) *Remarks on the Philosophy of Psychology, Volume I*. G. E. M. Anscombe G.E.M. and, von Wright, G.H. (eds.), translated by G. E. M. Anscombe. Oxford: Blackwell.

Wittgenstein, L. (1980b) *Remarks on the Philosophy of Psychology, Volume II*. Von Wright G.H., and Nyman, H. (eds.), translated by C. G. Luckhardt and M. A. E. Aue. Oxford: Blackwell.

Woodward, A.L. & Sommerville, J.A. (2000), 'Twelve-month-old Infants Interpret Action in Context', *Psychological Science,* 11, pp. 73–7.

Young, I.M. (1990) 'Pregnant Embodiment: Subjectivity and Alienation', in Young, I.M. (author.) *Throwing Like a Girl and Other Essays in Feminist Philosophy and Social Theory.* Bloomington: Indiana University Press.

Zahavi, D. (2001) 'Beyond empathy. Phenomenological approaches to intersubjectivity', in Thompson, E. (ed.) *Between Ourselves: Second-person Issues in the Study of Consciousness.* Exeter: Imprint Academic.

Zahavi, D. (2002) 'Merleau-Ponty on Husserl. A Reappraisal', in Toadvine, T., and Embree, L. (eds.) *Merleau-Ponty's Reading of Husserl*. Dordrecht: Kluwer Academic Publishers.

Zahavi, D. (2003) 'Phenomenology and Metaphysics', in Zahavi, D., Heinämaa S., and Ruin, H. (eds.) *Metaphysics, Facticity, Interpretation. Contributions to Phenomenology*. Dordrecht-Boston: Kluwer Academic Publishers.

Zahavi, D., and Parnas, J. (2003) 'Conceptual problems in infantile autism research: Why cognitive science needs phenomenology', *Journal of Consciousness Studies* 10(9), pp. 53-71.

Zahavi, D. (2004) 'The embodied self-awareness of the infant: A challenge to the theory-theory of mind?' in Zahavi, D., Grünbaum, T., and Parnas J. (eds.) *The Structure and Development of Self-Consciousness: Interdisciplinary Perspectives*. Amsterdam: John Benjamins Publishing.

Zahavi, D. (2005) *Subjectivity and Selfhood: Investigating the First-Person Perspective*. Massachusetts: MIT Press.

Zahavi, D. (2007a) 'Self and Other: The Limits of Narrative Understanding', *Royal Institute of Philosophy Supplement*, 60, pp.179-190.

Zahavi, D. (2007b) 'Expression and empathy', in Hutto, D.D., and Ratcliffe, M. (eds.) *Folk Psychology Re-Assessed*. Berlin: Kluwer/Springer Press.

Zahavi, D. (2008) 'Simulation, projection and empathy', *Consciousness and Cognition* 17(2), pp. 514–522.

Zahavi, D. (2009) 'Is the Self a Social Construct?', *Inquiry*, 52(6), pp. 551-573.

Zahavi, D. (2010a) 'Naturalized Phenomenology' in Gallagher, S. and Schmicking, D. (eds.) Handbook of phenomenology and cognitive science. New York: Springer.

Zahavi, D. (2010b) 'Empathy, embodiment and interpersonal understanding: From Lipps to Schutz', *Inquiry*, 53(3), pp. 285-306.

Zahavi, D. (2011). 'The experiential self: objections and clarifications', in Thompson, E., Siderits, M., and Zahavi, D. (eds.) *Self, No Self? Perspectives from Analytical, Phenomenological, and Indian Traditions*. Oxford: Oxford University Press.

Zahavi, D., & Overgaard, S. (2012) 'Empathy without Isomorphism: A Phenomenological Account', in Decety, J., (ed.), *Empathy from Bench to Bedside*. Cambridge MA: MIT Press.

Zahavi, D. (2014a) *Self and Other: Exploring Subjectivity, Empathy, and Shame*. Oxford: Oxford University Press.

Zahavi, D. (2014b) 'Empathy and other-directed intentionality', *Topoi*, 33(1), pp.129-142.

Zahavi, D. (2015) 'You, Me and We: The Sharing of Emotional Experiences', *Continental Philosophy Review*, 48(2), pp. 143–160.

Zazzo, R. (1976) 'The twin condition and the couple effect on personality development', *Acta Genet. Med. Gemellol*, 25(1), pp. 343–52.

Zazzo, R., (1978) ‘Genesis and peculiarities of the personality of twins’, in Nance W.E. (ed.) *Twin Research: Part A: Psychology and Methodology.* New York: Alan R. Liss.

Zoia, S., Blason, L., D'Ottavio, G., Bulgheroni, M., Pezzetta, E. and Scabar, A. (2007) ‘Evidence of early development of action planning in the human foetus: a kinematic study’ *Experimental Brain Research*, 176, pp. 217-226.