Doctoral theses at NTNU, 2023:252

Thomas Netland

Subjectivity, nature, existence

Foundational issues for enactive phenomenology

Doctoral thesis

NTNU
Norwegian University of Science and Technology
Thesis for the Degree of
Philosophiae Doctor
Faculty of Humanities
Department of Philosophy and Religious Studies

NTNU
Norwegian University of
Science and Technology

Thomas Netland

Subjectivity, nature, existence

Foundational issues for enactive phenomenology

Thesis for the Degree of Philosophiae Doctor

Trondheim, September 2023

Norwegian University of Science and Technology
Faculty of Humanities
Department of Philosophy and Religious Studies

NTNU
Norwegian University of
Science and Technology

NTNU
Norwegian University of Science and Technology

Thesis for the Degree of Philosophiae Doctor

Faculty of Humanities
Department of Philosophy and Religious Studies

© Thomas Netland

ISBN 978-82-326-7204-2 (printed ver.)
ISBN 978-82-326-7203-5 (electronic ver.)
ISSN 1503-8181 (printed ver.)
ISSN 2703-8084 (online ver.)

Doctoral theses at NTNU, 2023:252

Printed by NTNU Grafisk senter

Abstract

This thesis explores and discusses foundational issues concerning the relationship between phenomenological philosophy and the enactive approach to cognitive science, with the aim of clarifying, developing, and promoting the project of *enactive phenomenology*. This project is framed by three general ideas: 1) that the sciences of mind need a phenomenological grounding, 2) that the enactive approach is the currently most promising attempt to provide mind science with such a grounding, and 3) that this attempt involves both a *naturalization* of phenomenology and a *phenomenologization* of the concept of nature. More specifically, enactive phenomenology is the project of pursuing mutually illuminative exchanges between, on the one hand, phenomenological investigations of the structures of lived experience and embodied existence and, on the other, scientific accounts of mind and life – in particular those framed by theories of biological self-organization. The thesis consists of two parts. Part one is an introductory essay that seeks to clarify some of enactive phenomenology's overarching philosophical commitments by tracing some of its historical roots. Part two is a compilation of four articles, each of which intervenes in a different contemporary debate relevant to the dissertation's project.

Sammendrag

Denne avhandlingen utforsker og diskuterer grunnleggende spørsmål knyttet til forholdet mellom fenomenologisk filosofi og den «enaktive tilnærmingen» til kognitiv vitenskap, med mål om å avklare, utvikle og fremme *enaktiv fenomenologi* som prosjekt. Dette prosjektet er basert på tre generelle ideer: 1) at sinnsvitenskapene trenger en fenomenologisk forankring, 2) at den enaktive tilnærmingen i dag er det mest lovende forsøket på å gi sinnsvitenskapene en slik forankring, og 3) at dette forsøket involverer både en *naturalisering* av fenomenologi og en *fenomenologisering* av natur-begrepet. Mer spesifikt handler enaktiv fenomenologi om å søke gjensidig opplysende utvekslinger mellom, på den ene siden, fenomenologiske undersøkelser av erfarings- og eksistensstrukturer, og på den andre siden, vitenskapelige studier av sinn og liv – spesielt slike som er informert av teorier om biologisk selvorganisering. Avhandlingen består av to deler. Del en er et innledende essay (kappe) som søker å klargjøre noen av enaktiv fenomenologis overordnede filosofiske forpliktelser gjennom å spore noen av dens historiske røtter. Del to er en samling av fire artikler, som griper inn i hver sin samtidige debatt med relevans for avhandlingens prosjekt.

Acknowledgements

This thesis is the result of an author who has been lucky enough to inhabit supportive, stimulating, and friendly environments throughout the years working on this project.

First of all, I want to thank my two supervisors, Ståle Finke and Jonathan Knowles. The different competencies and philosophical styles they bring to the table have been a perfect match, together giving a breadth and a depth to the supervision that have been very rewarding for my work. Finke has from the start been able to see, clearer than myself, where my project was heading and what I was trying to say, helping me to find the direction in which to develop my initially vague ideas. Knowles has been invaluable in detecting unclarities in my arguments and ideas, helping me to refine and revise them through his well-put questions, and has generally done much more for my project than what was expected from his role as co-supervisor. I'm very grateful for the friendly support and constructive challenges that both Finke and Knowles have given me over the last four and half years.

Thanks also to my other friends at the Department for Philosophy and Religious Studies, NTNU, for feedback, discussions, and friendly conversations: Oskar Brennhagen, Oda Davanger, Claus Halberg, Jussi Haukioja, Maia Vige Helle, Sigurd Hverven, Rasmus Jaksland, Hege Dypedokk Johnsen, Asle H. Kiran, Miriam Kyselo, Andreas Liland, Anders Nes, Ole Marius Nesset, Mons A. Nyquist (the speculative metaphysician), Bengt Molander, Ronny Selbæk Myhre, Mattias Solli, Hermann Køhn Sæther, Jeske Toorman, Greger Vestgøte, Henrik Wathne and Hanna Winther. A special thanks goes to Hverven, Myhre, Solli and Helle. Hverven, for letting me use our co-authored article as part of this dissertation; for our good cooperation on that article; for providing helpful feedback to several other of the dissertation's texts; and for the enlightening experience of reading and discussing Adorno, Levinas, Whitehead, Wittgenstein and others together in our reading group. Myhre, for our cooperation in designing and teaching the course "Sinn i naturen" (Mind in nature), which I learned a lot from, and for being a crucial source of inspiration and learning for me, always sharing generously and patiently from his unparalleled well of knowledge and insight. Solli, for being a friendly presence and conversational partner in the hallway; for all the moral and intellectual support provided over the years; and for finding time to read and comment on the (not too short) introductory essay. Helle, for reading and commenting on almost everything I write; for always being ready to listen to and discuss my ideas; for being patient with me during the periods I've been completely absorbed by work; and for being my favorite philosopher, best friend, and life partner.

I've learned a lot from participating in two of the department's research groups, the Research group for Cognition, Consciousness, and Reality (CCR) and the Research group in Aesthetics and Phenomenology, and from attending the latter's annual Merleau-Ponty workshops in Paris. Thanks also to the participants of the VERP colloquium and to the two ex-Trondheimers, Michael Amundsen and Rasmus Haukedal, for helpful feedback on my initial ideas for this project.

I'm grateful to NTNU's Faculty of the Humanities for funding my four-year Ph.D. period, and to the board of the Department for Philosophy and Religious studies for letting me keep my office until I finished the thesis. Thanks also to the department administration, especially Kari Birgitte Berg and Marit Elisabeth Sveø, for all help and support.

Copenhagen University's Center for Subjectivity Research has been an invaluable source of energy and inspiration for this project on several occasions. First, with its Summer School in Phenomenology and Philosophy of Mind, which I attended in my second week as a Ph.D. student in August 2018 and enjoyed so much that I returned in both 2019 and 2021. Next, when it hosted me as a visiting researcher for four months in the spring of 2019. What I learned during my months in Copenhagen has been indispensable for this project. Thanks to Dan Zahavi for accepting my request to come visit, and to Søren Overgaard and Felipe León for letting me attend their course on Merleau-Ponty. Thank you to Gústav A. Bergmann Sigurbjörnsson for making sharing the same office so enjoyable, and to Mads Julian Dengsø, Patricia Meindl, Lucy Osler, Juan Camilo Toro, Thomas Szanto, and all other long- and short-time visitors and employees I met at the center for providing such an inspiring, friendly and welcoming atmosphere. A special thanks to Dengsø, for all our cigarette break conversations (sorry for being a bad influence); for his insightful and constructive feedback on several of my texts; and for the many hours of fruitful and entertaining discussions we've had reading Gallagher, Simondon, Toadvine and others in our long-distance reading group.

I would also like to thank the six peer reviewers whose constructive feedback have contributed to the shape of three of the dissertation's articles: Ezequiel Di Paolo, Saulius Geniusas, Komarine Romdenh-Romluc, and three reviewers who remain anonymous.

Thanks to Eddie Andreas Dahle, Khaleel Etwebi, Jon Martin Jakobsen, Bjørnar Skaug Karlsen, Hermann Køhn Sæther and Thomas Viten for friendships that have helped me stay relatively sane through these years.

Lastly, I'm extremely grateful for the unwavering love, encouragement, support, and understanding that I've got from my parents, siblings and grandparents throughout this period. Thank you!

Table of contents

1
Introduction

What is the mind, how should it be studied, and what is the relation between philosophical and scientific approaches to the mind? These are some of the overarching questions that this thesis tries to address. More specifically, my aim has been to investigate some foundational issues concerning the relation between phenomenological philosophy and the contemporary *enactive approach* to cognitive science. These investigations have resulted in four articles that, while directed at different debates, are nonetheless united by a common vision, which consists of three interrelated ideas: 1) that the sciences of the mind – *psychology*, in the broadest sense of that term[1] – need a phenomenological foundation, 2) that the enactive approach represents the most promising case of a phenomenologically founded psychology, and 3) that a full acknowledgment of this role for phenomenology entails a *phenomenologization* of the concept of nature, as well as a *naturalization* of phenomenology.

I am not the originator of any of these ideas, nor of their combination. When Edmund Husserl launched his phenomenological philosophy in the early 1900s, he was greatly influenced by the ideas of his teacher, Frantz Brentano, whose *descriptive psychology* was intended to serve as a foundation for the psychological sciences. And though Husserl was eager to define his phenomenology as something *more* than the project of psychology, he also insisted that one of its virtues was the potential to serve as a foundation for psychology. In the mid-1900s Maurice Merleau-Ponty further developed the psychological significance of phenomenology by taking a phenomenological approach to understanding the relations between mind and body – a project that from the start was also aimed toward a philosophy of *nature*. When the enactive approach was born with the publication of *The Embodied Mind* in 1991, the authors explicitly labeled their project a "modern continuation" of Merleau-Ponty's philosophy (Varela et al., 1991: xv), and phenomenological philosophy has continued to play a central role in enactivist thinking in the decades since.[2]

[1] Unless otherwise specified, 'psychology' is used in this broad sense, which includes cognitive science and all other scientific approaches to mental phenomena, throughout this introduction and the introductory essay.

[2] Although 'enactivism' has come to denote a heterogenous group of approaches in later years (see Ward et al., 2017 for an overview), I have in this project maintained a conservative understanding of the name, taking it to refer solely to its 'Varelian' variety (e.g., Thompson, 2007; Di Paolo et al., 2017).

Three phenomenological ideas – all of which can be found already in the works of Husserl – are especially important for the enactive view of the mind. The first is that the experiential structures of the mind are *irreducible* – they require a phenomenological elucidation and cannot be reduced to any non-phenomenological theory. The second is that the mind is *embodied* – it is not, in the first instance, an abstract thinker, but rather an expression of a bodily agent's practical orientation in its surroundings. The third is the idea that the mind and its world are *inseparable*: they stand in a relation of co-constitution or co-specification, where the mind is always defined by the ways it is directed towards the world in which it operates, and this world in turn is defined by its significance for the mind. As phenomenological, these ideas are founded on studies of the experiential dimension of the mind – i.e., studies of *how* things manifest to us *as* experiencing minds. A defining trait of the enactive approach is the attempt to *naturalize* these ideas by, among other things, linking them to theories of biological self-organization and models of non-linear dynamical systems from mathematics. Enactivists frame this naturalization project in terms of a process of *mutual illumination* (Varela et al., 1991: 15) between phenomenology and the sciences of life and mind, which they see as ultimately leading towards a transformation of the traditional scientific view of nature into one that recognizes the irreducible reality of subjectivity, purpose, and meaning.

I use the term 'enactive phenomenology' to refer to phenomenology as it is involved in this project.[3] The main aim of this thesis has been to identify and explore some of the challenges faced by enactive phenomenology in order to clarify and develop its core assumptions by bringing it to bear on contemporary debates.

The articles make up part two (chapters 9-12) of the dissertation. Part one is the introductory essay, where I'm going to provide a framework that binds together the thesis' four articles as parts of one unified project. This effort consists in an exploration of some key moments in the historical development of phenomenological philosophy, from Brentano's descriptive psychology (ch. 4), via Husserl's (ch. 5) and Merleau-Ponty's (ch. 6) phenomenological projects, up to contemporary enactive phenomenology (ch. 7). Before I embark on that journey, and say more about why I have chosen this strategy (ch. 2), I'll first, as a prolonged introduction, outline the broader field of issues in which my project is placed (1.1) before giving a short presentation of each of the four articles (1.2).

[3] I'm not the first to use this term (e.g., De Jesus, 2016; Gallagher and Zahavi, 2014; Gianotta, 2018), but its appearances in the literature are scarce, with no established usage or well-defined meaning, so I'm taking the liberty of developing my own definition of it here.

1.1 The broad picture

Although the thesis' focus is narrowed down to specific issues in a limited field of literature, it is driven by problems of a much broader nature, which it will be good to bear in mind as we proceed. One such problem, alluded to in the questions above, concerns the ontological and methodological foundations of psychology. More than 150 years after the advent of experimental psychology initiated psychology's off-branching from philosophy into a science of its own, it is still, arguably, operating in what Thomas Kuhn (1962/1996) would call a pre-paradigmatic phase, lacking a core consensus about both what its subject matter is and how it should be studied. This is not to deny that there have been significant breakthroughs in many fields of psychological research over the years. But the fact remains that a common framework for interpreting, evaluating, and binding together the results from these different fields of research has yet to be established.

The issue of psychology's ontological foundations can be divided into a set of interwoven sub-questions: What kind of thing is the mind, what are its defining properties, and how is it related to the body and, ultimately, to the rest of nature? The methodological issue concerns how one should proceed in order to understand the mind. For instance, are experimental methods sufficient? If not, what other methods are required? And what authority, if any, do other disciplines – e.g., physics, biology, philosophy – have over psychology's domain?

Now, given that all ontologies are *motivated* in one way or other, and all methods include an idea of their target, issues of ontology and methodology presuppose each other and cannot be separated. We are thus faced with one of philosophy's perennial and ever-relevant questions: where do we begin?

A central idea of this thesis, in line with the general teachings of phenomenological philosophy, is that we should begin where all theorizing inevitably *must* begin: with the *lifeworld*, the field of meaning and phenomena that we inhabit and perceive. If we want to understand what mind is, we should look to how mind manifests in the lifeworld, both in ourselves as *subjects of* the lifeworld and in others as *phenomena in* the lifeworld. From this perspective, failing to do justice to how mental phenomena are primarily revealed in the lifeworld is the same as losing sight of the essence of these phenomena.

This approach might appear to conflict with naturalism, which is the dominant position in contemporary analytic philosophy and in psychology. A common definition of naturalism is that it involves both an ontological and a methodological claim: first, that only entities

compatible with the world as described by natural science can be said to really exist, and, secondly, that the methods of natural science are the only legitimate way of gaining knowledge about these things. And indeed, if we adopt a very strict concept of natural science – ascribing to it the ontological position that all of reality is reducible to the world as described by physics, and seeing its methodology as exhausted by measurements, mathematization, empirical experiments, inductive inferences, and deductive-nomological and/or statistical explanations – phenomenology is certainly incompatible with naturalism. For, from the phenomenological perspective, the lifeworld consists of structures of meaning that cannot be reduced to the universe of physics but must be grasped in their own terms by way of a *phenomenological* method aimed at elucidating the constitutive structures of phenomena's meaningful manifestation as such.

The relation between phenomenology and naturalism is thus one of the foundational issues for the present work; it is present – more or less explicitly – in all four articles, and it also marks a main thread in the introductory essay below. Though I will not claim to have resolved every possible problem pertaining to this issue, the view I'm advocating is one that construes both naturalism and phenomenology so as to render their relation non-problematic. This involves, among other things, recognizing that the strict view of natural science indicated above is not actually supported by natural science itself. First, there is as of yet no scientific proof that all phenomena are fully reducible to the language of physics, but there are plenty of scientific resources available for making sense of genuinely *emergent* and non-reducible phenomena. Such resources are crucial for the enactive approach, which sees the mind as an expression of the emergent, autonomous form of organization that characterizes living organisms and is describable in terms of theoretical biology and with the mathematical models of non-linear dynamical systems. Secondly, far from stripping the universe of the meaningful structures of the lifeworld, natural science *presupposes* these structures: scientific theories and experimental results are understandable as such only by virtue of the meaning they have in the lifeworld in which all scientists inevitably operate. This, thirdly, means that all science – *qua* dealing with meaning-structures in the lifeworld and insofar as they involve an implicit or explicit grasp of these structures – already presuppose a kind of 'proto-phenomenological' method, a form of 'intuition of essences' that phenomenological philosophy cultivates into a more explicit enterprise and pursues for its own sake. In other words, all science presupposes an implicit proto-phenomenology. Rather than being incompatible with the methods of natural science, phenomenology can here be seen as a refined and articulated version of a method that is already tacitly at play in scientific practice and which thus has the potential to inform

scientific theorization by making the implicit explicit and thus facilitate critical discussion of theories in light of their adequacy to the phenomena. If these points are acknowledged, it is certainly possible – perhaps even mandatory – to defend a naturalism that has room for phenomenology. A defining feature of this kind of naturalism, which is the naturalism of the enactive approach, is that its concept of nature is *phenomenologized*, in the sense that it recognizes the meaning-structures described by phenomenology as irreducible natural phenomena.

At the same time, making the relation between phenomenology and naturalism unproblematic also involves a *naturalization* of phenomenology. As I use the term, to naturalize phenomenology does not mean letting natural science absorb phenomenology's domain and assume full authority over it. That would amount to giving up on the phenomenological project. Indeed, when Edmund Husserl first launched the phenomenological program in the early 1900s, it was explicitly defined in contrast to the idea, prevalent among his contemporaries, that philosophical issues can be decided by natural science. Rather, when I speak of a naturalized phenomenology, I have in mind the project of *making sense* of phenomenological insights and analyses *as* insights and analyses about structures belonging to nature, by putting them into contact with relevant theories, models, and data from other sciences, and letting these different perspectives partake in a process of *mutual enlightenment* (Gallagher, 1997). This, again, is also an idea advocated by enactivists, though part of what motivated my project in this dissertation in the first place was what I saw as a lack of clarity in the literature regarding how this 'mutual enlightenment' actually works. Thus, the issue of mutual enlightenment is also present – more or less explicitly – in all of the articles making up this thesis.

Now, when I talk of 'phenomenology and *other* sciences,' this is because one thing that I've learned from my work on this thesis is that the sharp distinction between phenomenology – or philosophy in general, for that matter – and science is largely artificial. All science, as we saw above, rests upon forms of intuition that have phenomenological, or philosophical, dimensions. And, moreover, while phenomenology's scope reaches beyond issues in psychology, the phenomenological project clearly includes something that there is no reason not to call a *science of the mind*, in the form of disciplined and systematic articulations of core structures of minded existence.

That said, another of the broader topics that underlie this dissertation – in addition to that of the foundations of psychology – concerns the relation between psychology and philosophy. The issue here has to do with the fact that the mind has a special status as an area

of investigation: it is not simply a thing among other things, but also that by which we *know* and *think about* things. This means that philosophical subfields such as logic, epistemology, and ethics also have a legitimate interest in the workings of the mind. The question now is, does this mean that the foundations of these fields are to be found in psychology? Can, for instance, the validity of the laws of logic be explained by a psychological account of the mind as a natural phenomenon?

This was one of the main questions for Husserl in his *Logical Investigations* (1900-1901/2001), the founding text for phenomenological philosophy, and his answer was a resounding 'no': logical matters need to be understood in their own terms and cannot be reduced to psychology, and phenomenology – as a return to the 'things themselves' in their manifestation for us as what they are – is the best way to facilitate understanding things in their own terms. At the same time, insofar as phenomenology is a study of how phenomena are experienced, and experience is a capacity of the mind, it would seem that Husserl's proposal still amounts to making a form of psychology – in the guise of phenomenology – the foundation for logic. And indeed, in the first edition of *Logical Investigations*, Husserl explicitly labeled phenomenology a form of psychology. This, however, he quickly regretted, and proceeded in later works to describe phenomenology as a *transcendental* philosophy clearly separated from psychology.[4] The meaning of this is not to deny that phenomenology is concerned with the mind, but rather to distinguish the *way* phenomenology is concerned with the mind from that of psychology. In short, the idea is that whereas psychology studies the mind as a phenomenon *in* nature, transcendental phenomenology studies the mind as a *condition of possibility* for all phenomena's appearance as such. Or, in other words, whereas psychology is concerned with mind as an *object*, phenomenology is concerned with mind as the *subjectivity* wherein all objects appear.

From this perspective, the idea of a naturalized phenomenology can appear problematic. That is, if phenomenological claims concern the structures in virtue of which any object manifests for us as such, then trying to make sense of these structures as realized *in* nature, as features of natural 'mind-objects,' would seemingly amount to an abandonment of phenomenology's transcendental ambition. We would, in other words, no longer be talking about mind in its transcendental function, but rather mind as a phenomenon that *presupposes*

[4] Transcendental philosophy is mainly associated with the project developed by Immanuel Kant in his *Critique of Pure Reason* (1781/2007). I discuss the relation between Kant's and Husserl's transcendental projects in the first article (A1) and present Husserl's transcendental phenomenology in more detail in chapter 5 below.

this function in order for it to be apprehended as such, meaning that we would not be faced with a real naturalization of (transcendental) phenomenology as much as with *a change of topic* – i.e., from transcendental phenomenology to psychology. The point here is not that such a change of topic is illegitimate, but only that it cannot – at least for Husserl – be seen as having any bearing on the status of phenomenology as transcendental philosophy.

For Husserl, the claims of transcendental phenomenology certainly have the potential of being interpreted as pertaining to mind as a phenomenon of nature, and will as such be suitable as an ontological foundation for psychology – but when we do this, we are engaged in phenomenological *psychology* (also called *eidetic* psychology) and no longer transcendental phenomenology. The relation between transcendental phenomenology, phenomenological psychology, and the idea of naturalization is another foundational issue for this dissertation, addressed most explicitly in the first article (A1). More precisely, the issue has been to understand the exact role phenomenology plays for the enactive approach, and whether its playing this role leads to a renewed understanding of the phenomenological project itself. The easiest solution, in light of Husserl's phenomenology, is to say that enactivists employ phenomenology in the form of phenomenological psychology: They take phenomenological accounts of the mind as accounts of the mind as an object in nature and use them to inform the ontological foundations of their psychological theory, which they then 'naturalize' through, among other things, their emergentist theory of autonomy. Thus conceived, transcendental phenomenology is left intact, firmly placed in a domain of inquiry separate from the one enactivism operates in.

There is however something about the nature of both enactivism and phenomenology that makes this solution appear *too* easy. First, although the primary focus of the enactive approach is psychological, in the sense that its main aim is to understand the mind as a natural phenomenon, it also involves more wide-ranging philosophical ambitions, including epistemological ideas and, as mentioned, an ontological vision that entails a rethinking of the concept of nature. Thus, it seems that the 'psychology' category, at least when defined as separate from philosophy proper, is too narrow for the enactive project. Secondly, although Husserl was adamant about the differences between transcendental phenomenology and phenomenological psychology, he also explicitly recognized the close relation between the two, insisting on one occasion that it would be *pointless* to treat them separately (1931/1973: 147). Hence, even if we accepted that the phenomenology of the enactivists were of the mere psychological kind, we could still expect that it had a transcendental significance as well. Thirdly, Husserl's own phenomenological analyses of the embodied, intersubjective, and

temporal nature of subjectivity seem to entail that even the 'transcendental' subject must be understood as an experienceable, worldly existence and hence not as a 'pure' subject that can be distinguished absolutely from the mind conceived as an object. This, too, suggests a more ambiguous relationship between transcendental phenomenology and phenomenological psychology, and it opens the door to the enactivists' naturalization project by construing the mind as essentially embodied. Fourth, the distinction between transcendental phenomenology and phenomenological psychology becomes even more blurred, and the significance of embodiment even more pronounced, in the phenomenology of Maurice Merleau-Ponty, which from the start has been the main phenomenological source for the enactive approach. Indeed, in Merleau-Ponty we find a project of developing phenomenology into a philosophy of nature, centered on the idea of the mind as an embodied mode of existence that requires an integration of a plurality of perspectives in order to be adequately illuminated. This, then, is where the main clues regarding phenomenology's significance for enactivism are to be found.

I've now, in broad strokes, painted the background of general issues against which the dissertation's articles are written. Summing up, two of the overarching topics are the foundations for psychology and the relation between psychology and philosophy. More specifically, my approach to these topics is driven by questions concerning the status of phenomenology as a foundation of psychology and how this relates to the issue of naturalism, our concepts of mind and nature, the relation between transcendental phenomenology and phenomenological psychology, and the meaning of enactivism's methodological idea of a 'mutual enlightenment' between phenomenology and other sciences.

As mentioned, the four articles explore these broad issues by intervening in narrower debates from contemporary literature. With the broad picture now in place, it's time to get an initial grasp of what is going on in each of the articles.

1.2 Presentation of articles

Note: The articles are enumerated as A1-A4. I use this abbreviation when referring to them below and throughout the introductory essay.

A1: "The living transcendental: An integrationist view of naturalized phenomenology"
In this article, published in 2020 in *Frontiers in Psychology* 11 (1548): 1-17, I take issue with what I call 'the transcendentalist challenge' to the idea of naturalized phenomenology. This is the challenge that phenomenology is a transcendental philosophy, concerned with the conditions of possibility for objective scientific knowledge (among other things), and therefore

cannot be naturalized in the sense of being informed by or become part of objective science. I use Sebastian Gardner's (2015) transcendentalist interpretation of Merleau-Ponty, which is aimed specifically at rejecting naturalistic appropriations of the latter, as the main example of this kind of challenge. Following Dan Zahavi (2017), I argue that although we ought to reject the idea that phenomenology can be *absorbed* by natural science, there are two other conceptions of naturalized phenomenology on the table: what I call *modest transcendentalism* (MT) and the *integrationist view* (IV). Where the former acknowledges the possibility of a fruitful dialogue between the domains of transcendental phenomenology and objective science while maintaining that the domains are strictly separate, the latter involves rethinking the ideas of the transcendental and of nature in a way that construes the domains as more integrated. Arguing that MT is insufficient for making sense of the possibility of meaningful exchanges between phenomenology and science, I go on to make the case for IV: first, by presenting the non-objectivist view of nature shared by enactivists and Merleau-Ponty; then, by sketching Merleau-Ponty's (1945/2012) immanent critique of transcendentalism; and lastly by elaborating Merleau-Ponty's (ibid.) phenomenological interpretation of the pathology of the neurological patient Schneider as an example of how the integration of the transcendental and the natural, the phenomenological and the psychological, works in practice. The view we end up with here is one where nature, more specifically biological nature, is reconceived – *pace* objectivism – in terms of intrinsically meaningful and subjective modes of being, and the transcendental is reconceptualized as pertaining to the organization of contingent nature in the form of living, embodied forms of existence.

This is the article where I most explicitly address the issue of the relation between transcendental phenomenology, phenomenological psychology, and the idea of naturalization. The very first thing I wrote for this dissertation, there are naturally elements of this article I would want to revise in light of how both my knowledge of the literature and my own ideas have progressed in the years since. Still, the general approach I begin to develop here is well aligned with the rest of my project and works well for setting the stage for the other articles. In fact, although the term 'integrationist view' only appears in this first article, it is possible to see each of the next three articles – though focused on different topics – as further explorations and developments of aspects of the idea of integration proposed here.

A2: "The lived, living, and behavioral sense of perception: An enactive-phenomenological response to a sensorimotor critique"

More concrete in its focus than A1, this article, published in 2022 in *Phenomenology and the Cognitive Sciences*: 1-25, aims to illuminate phenomenology's significance for the enactivist

view of perception by responding to Jan Degenaar and Kevin O'Regan's (2017) critique of this view. In brief, the critique is that enactivists' view of perception as constituted by organisms' processes of self-individuation is inferior to the critics' own, arguably more economical view that exercises of sensorimotor capacities are sufficient constitutive conditions for perception. The main claim of my response is that Degenaar and O'Regan's alternative, unlike the enactivist view, is unable to do justice to the *sense* or *meaning* that phenomenological analysis posits as essential to perception. Taking a phenomenological approach, I show how perception involves the presentation of meaningful surroundings *for* a vulnerable and embodied form of existence, and argue that the enactivist view is best suited to accommodate this fact. I also touch on the methodological question of how one ought to proceed in order to define mental phenomena such as perception, emphasizing that the phenomenological approach does not simply involve introspection but also considerations of the behavioral manifestation of mental phenomena in observable others. In this way, I propose a view of perception as an integration of *lived* (meaningful *for* the perceiver), *living* (the perceiver as a living body), and *behavioral* (empirically manifested) aspects.

In terms of the issues summarized at the end of the previous section (1.1), this article advocates the need for a phenomenological founding of psychological concepts, argues that enactivism does better at this than its sensorimotor critics, and explores some aspects of the enactivist idea of mutual illumination. By contributing to specifying the nature of a mental phenomenon (perception) to be accounted for by cognitive science, phenomenology here functions as phenomenological or eidetic psychology. Further, the article shows one of the ways in which the phenomenological dimension of enactivism both methodologically and ontologically is *integrated* with its biological dimension: the 'essences' of perception specified by phenomenology are anchored in and interweaved with a naturalistic theory of biological self-individuation, and the phenomenological method is construed as a reflection on empirically observable forms of existence. This article is also the part of the dissertation that gives the most thorough elaboration of enactivist theory.

A3: "Projection or encounter? Investigating Hans Jonas' case for natural teleology"
Co-authored with Sigurd Hverven, this article, published in 2021 in *Phenomenology and the Cognitive Sciences*: 1-26, identifies and discusses some of Hans Jonas' arguments for recognizing immanent purposiveness in non-human organisms. Jonas' view on this matter is an important source of inspiration for enactivists, who see adaptive autonomy – the self-individuating form of organization that the mind on their view shares with all life – as involving

the realization of purpose and meaning on part of the adaptive autonomous system. Addressing worries that have recently been voiced concerning Jonas' influence in this context, our article draws attention to five arguments from Jonas' works that together make for a strong case for seeing non-human life as purposive: 1) That natural science's exclusion of teleology is *methodological* rather than ontological, 2) that to deny the existence of purposiveness is a performative self-contradiction, 3) that our evolutionary kinship to other species makes it improbable that only humans are capable of purposiveness, 4) that the phenomenon of metabolism indicates the reality of purposive activity, and 5) that it is on the basis of concrete encounters with other living organisms that we can adequately judge that they realize purposes. Arguing that this reconstruction of Jonas' position is sufficient for fending off the worries we address, we end by raising a concern of our own. In short, we claim that Jonas' account of non-human life is focused too much on *identity* and too little on the significance of *differences* between life-forms.

This article might seem like the odd one out in this collection of articles, and its focus is admittedly somewhat different from that of the others. Although Merleau-Ponty's philosophy plays an important part in the three other articles, none of them are as focused on the ideas of one philosopher as this article is on Jonas' philosophy. This difference in article genre notwithstanding, our topic and arguments nonetheless fit neatly into the dissertation's overall project. First, the Jonas-inspired view of purposiveness in nature is a central component of enactivism's non-objectivist concept of nature. As such, our investigations in this article can be seen as an elaboration of the rethinking of nature that is a key part of the approach I'm pursuing. And, although we do not explicitly thematize phenomenology as such, Jonas' 'existential biology' is developed from within the phenomenological tradition, and it is no coincidence that his main work on this topic is called *The Phenomenon of Life* (1966). Indeed, Jonas' phenomenology of life, with the methodological significance of concrete encounters that we emphasize in our article, displays much of the ontological and natural-philosophical potential of phenomenology that I'm seeking to illuminate and further develop in this dissertation, and is as such also relevant for my understanding of the idea of 'mutual illumination.'

A4: "Phenomenology in enactivism's concept of nature: Anti-objectivism, naturalism, and mutual enlightenment"

Where A1 is concerned with the transcendentalist challenge to naturalized phenomenology, this article discusses a set of *naturalist* challenges to enactivism's phenomenology-informed concept of nature. I start by presenting the enactivist concept of nature as based on the paradigm

of *embodied existence* understood as an integration of subjective and objective dimensions. Further, I emphasize, with the help of Peter Godfrey-Smith (2001), that both the enactivist concept of nature and its objectivist alternative belong to the domain of *philosophy of nature* – i.e., their function is to construe a coherent picture of nature that is consistent with our scientific knowledge, but which also takes concerns beyond those pertaining to any specific scientific field or theory into account. Insofar as both enactivism and the objectivist concept of nature are consistent with the current state of scientific knowledge, their legitimacy must be evaluated in light of the other concerns they aim to accommodate. After showing how the enactivist concept of nature is motivated by two phenomenological considerations – pertaining to the *transcendental status* and *relational nature* of experience –, I present three naturalist objections raised against Shaun Gallagher's (2018) recently proposed case for the enactive-phenomenological rethinking of nature: 1) that a non-objectivist concept of nature threatens to undermine the objectivity of science, 2) that phenomenology is not necessary for cognitive science, and 3) that the enactivist concept of nature grants phenomenology a naturalistically illegitimate amount of authority. I argue that these objections rest on a misunderstanding of the nature of phenomenology – most significantly, I claim that they presuppose an artificial separation between the domains of phenomenology and science. My key proposal is that phenomenology's role in enactivism's concept of nature must be seen as that of explicating structures that are already inherent in scientific approaches to mind and life. From this perspective, the enactivist concept of nature is something that emerges from and is justified through the explicit engagement in a hermeneutic circulation – a *mutual enlightenment* – of perspectives that in some sense is always implicitly operative in science's dealings with phenomena of life and mind, and not – *pace* the naturalist critique – something forced upon science by a detached philosophy.

In this way, this last article interweaves many of the ontological and methodological considerations from the previous articles and develops the overall project further by showing how it deals with the issue of naturalism. It overlaps thematically with A3 and a part of A1 on the topic of the enactive-phenomenological non-objectivist concept of nature, and with A2 in its focus on the idea of mutual illumination, and develops these ideas further by exploring their interconnections and bringing them to bear on a new context. In a sense, the position put forth in this article is, like in A1, an *integrationist view* – though now significantly refined and directed toward a different set of issues.

Hopefully, the common thread running through these different articles is quite evident. In order to really bind them together as parts of one unified project, however, I will now embark on an exploration of some of the developmental moments that have led to phenomenology as it figures in enactivism. With this, I aim to shed light on the deeper theoretical and methodological commitments that the articles share, more thoroughly and systematically than what is possible in the article format.

PART I
INTRODUCTORY ESSAY:
THE ENACTIVE-PHENOMENOLOGICAL MOVEMENT

2
Introducing
The enactive-phenomenological movement

What is phenomenology? What is the phenomenological method, and what concept of mind does this method give us? What is the relation between phenomenology and psychology, and in what ways, if any, can they inform each other? The main aim of this introductory essay is to provide some more clarity to these questions, in particular as they pertain to enactive phenomenology.

My approach to this task begins with a recognition of the historical nature of philosophy and science. New ideas never pop into existence *ex nihilo*, but emerge and develop over time, responding both to ideas of the past and to motivational forces in the present. Phenomenology is, of course, no exception. As Zahavi puts it in his introduction to *The Oxford Handbook of the History of Phenomenology*, "[p]henomenology did not emerge ready-made like Athena from Zeus' forehead, but was formed and developed in reaction to and under inspiration from various preceding and competing philosophical traditions" (2018: 1). And, I would add, in reaction to and under inspiration from developments in disciplines beyond philosophy – especially, as we'll see, the development of psychology into an autonomous science. Moreover, the history of phenomenology is a history of continuous developments and redefinitions of the phenomenological project, making the nature of phenomenology more of a *dynamic* than a static matter. This is why Herbert Spiegelberg, in his brilliant history of phenomenology, *The Phenomenological Movement* (1971), opts to talk of a phenomenological *movement* rather than a 'school,' 'circle,' or 'tradition.' Spiegelberg makes three observations in support of this choice of terminology:

> (1) Phenomenology is a moving, in contrast to a stationary, philosophy with a dynamic momentum, whose development is determined by intrinsic principles as well as by the 'things', the structure of the territory which it encounters. (2) Like a stream it comprises several parallel currents […] (3) They have a common point of departure, but need not have a definite and predictable joint destination […]. (1971: 2)

In connection to the last point, he further remarks that the developmental pattern of phenomenology "seems to resemble that of an unfolding plant more than that of a river" (ibid.). This gives us a good framework for thinking about enactive phenomenology. Enactive phenomenology can be conceived as a branch of the phenomenological plant, intrinsically

connected to though not identical with its historical predecessors. Resulting from a series of distinctive developments in response to demands from both intrinsic principles of phenomenology and the topology of the territory it has been brought to bear on, enactive phenomenology is not the sole heir to Husserl's philosophy, but a contemporary manifestation of one of several developmental paths traceable back to his ideas.

My strategy for approaching the above questions, then, is to trace the evolution of enactive phenomenology through some of its main historical stages.[5] Let me emphasize that this does not mean that I'll be offering an actual *history* of enactive phenomenology. My focus is thematic, but I've selected themes from different stages in the unfolding of the phenomenological movement that I find especially relevant for understanding enactive phenomenology, and I treat them chronologically in order to illuminate how each stage is both motivated by and surpasses the previous one. This also means that I do not presume to have covered *all* the relevant historical developments leading to enactive phenomenology. I do, however, think that the themes I've selected are suited to shed light on the features of enactive phenomenology most relevant for the framework of my articles.

One reason for this choice of strategy is that it gives me the opportunity to situate enactive phenomenology historically, and thus do justice to my view of philosophy as essentially historical in nature – an effort I think is valuable for its own sake, and which is not pursued in any of the articles. Another reason is that this approach, as we'll see, has some clear advantages when it comes to illuminating the theoretical and methodological foundations of enactive phenomenology.

I start with a very brief outline of the emergence of experimental psychology in Germany in the mid-1800s (ch. 3). This was when and where psychology started its off-branching from philosophy into an independent science – a process that saw the formulation of many problems and ideas that are still relevant in contemporary mind science. I then move on to present some key *motifs* from Brentano's descriptive psychology, which he proposed largely in response to these developments, and which was a significant influence on Husserl's phenomenology (ch. 4). In this way, I'm able to draw attention to how the histories of phenomenology and psychological science are closely connected from the start – a connection that will also prove valuable for understanding phenomenology's role in contemporary

[5] Käufer and Chemero (2015) similarly trace the historical roots of contemporary phenomenology-informed cognitive science, and include many elements and figures that I leave out. Still, our investigations overlap at some key points and are, I take it, in general agreement about the subject matter.

enactivism. From Brentano, I dive into some central elements in Husserl's phenomenology (ch. 5). I start by showing how Husserl's phenomenology is defined in contrast to Brentano's descriptive psychology and in opposition to the form of naturalism called 'psychologism,' before taking a closer look at Husserl's methodology, his distinction between transcendental phenomenology and phenomenological psychology, and some key components of his phenomenological concept of the mind. We'll here see many of the concepts and problems that frame my articles emerge. From Husserl, I turn to present some relevant parts of Merleau-Ponty's early philosophy, in particular his notion of *structure of behavior* and its connection to his view of phenomenology and of phenomenology's relation to psychology (ch. 6). This is where we find the main phenomenological source of inspiration for the enactive approach. Comparing the direction of Merleau-Ponty's project to that of Husserl in this way will be fruitful for understanding the phenomenological foundations of enactivism. Lastly, I turn to outline some of the specifics of enactive phenomenology, focusing on how ideas from the previous chapters are articulated and employed in novel ways within the context of cognitive science (ch. 7).

3
Prelude
The emergence of experimental psychology

"What is science; what is mind; how can one be brought to bear upon the other?" (Ash, 1995: 51). These questions, which Mitchell Ash uses to characterize the state of psychology in the mid-to-late 19th century Germany, are as pertinent in contemporary mind science as they were then. And, as we'll see, several of the issues we are grappling with today can be traced back to that period. Especially relevant for the topic of this dissertation are the issues concerning the methodology of psychology, and the relationship between psychology, physiology, and philosophy.

The mid-19th century marks the beginning of psychology's gradual off-branching from philosophy and emergence as an independent discipline. That psychology should break away from philosophy was however not the intention of this development's originators, who on the contrary saw in psychology the potential for a radical reformation of philosophy itself. Impressed by the successes of natural science, which were by then firmly established, their projects were driven by two core philosophical convictions. First, the empiricist idea of the epistemological primacy of experience. If experience is the foundation for all knowledge and thought, they reckoned, then the study of mind – the domain of experience – must be the most foundational discipline. Secondly, the naturalist idea that the methods of natural science mark the best road to genuine knowledge. From this perspective, then, philosophy is promised a path to become a genuinely foundational and *scientific* enterprise by transforming itself into empirical psychology.

These ideas were far from new at the time but had by then been defining features of empiricist philosophy for at least well over a century. What makes this period stand out is the way they were practically implemented. In the 1850s, physicist-turned-philosopher Gustav Theodor Fechner started to pursue his program of *psychophysics*, the experimental study of relations between stimuli and sensation, thus marking what is commonly referred to as the birth of experimental psychology (Hergenhahn, 2000: 223). The following decades saw a rapid increase of studies pursuing this new approach to psychology, with different laboratories and research programs popping up in several German cities.[6] A key source of inspiration for the

[6] Continuing for over half a century as a subdiscipline of philosophy, the growing number of experimental psychologists and their increasing professionalization through laboratory training, together with a growing discontent in the philosophical community for having to compete for the

emergence of experimental psychology was the progress in the science of *physiology*, which was institutionalized at German universities in the first half of the 19th century, and had started to generate insights into the physical mechanisms of the human body and their effects on psychological phenomena. Encouraged by these developments, experimental psychology began as an attempt to use similar experimental procedures to study the mechanisms of the human mind. Indeed, Wilhelm Wundt, who in the 1870s established what according to Mitchell Ash was "the world's first continuously operating psychological laboratory" (1995: 17), began his career as a physiologist and made use of his equipment from physiology in his psychological experiments.

A central issue for both physiologists and experimental psychologists at the time was that of the relation between the mental and the physical – i.e., the mind-body problem. Having had a place in philosophy at least since the time of Descartes, the scientific developments of the 1800s led to a reframing of the issue, which now came to be called "the psychophysical problem" (Ash, 1995: 51). Now, it seemed, the mind-body problem was no longer a task for mere philosophical speculation, but something that could be studied experimentally, combining insights from physiology and the new psychology.

Though the shape of a shared ambition – to effectuate an empiricist and naturalist reformation of philosophy and provide a scientific solution to the mind-body problem – was thus formed, there was little consensus among its proponents about how exactly this project should be realized.[7] One key question was that of the relation between physiology and psychology. What is their proper division of labor? Is the psychological reducible to the physiological, do they study two separate ontological domains, or what? Another contentious issue was the role of introspective methods in psychology and their relation to quantitative results. For many, taking an empirical approach to psychology meant not only to study the mind 'from the outside', but also – following in the footsteps of classical empiricists such as John Locke, David Hume, and John Stuart Mill – included observing one's own mind as it manifests in first-personal experience. Though first-personal reports were integral to virtually all psychological experiments, psychologists disagreed about how to balance the authority

same university positions against experimentalists who many viewed as no longer doing real philosophical work, finally led to the first psychology departments in Germany being established in the first decades of the 20th century (Ash, 1995: ch. 3).

[7] To illustrate this, consider Ash's description of the early participants in the meetings of the Society for Experimental Psychology as "unified by little more than a definite idea of what psychology should not be - philosophical speculation - and a vague idea of what it should become - an empirical science" (1995: 66).

between quantitative data and reports given by people (presumably) more skilled at subjective self-observation. A more fundamental question, to which many of these other issues are connected, was how one should conceptualize the mind in the first place. For instance: Is the mind an assemblage of mental 'atoms', as empiricists had long believed and which seemed to cohere well with the physiological notion of stimuli popular at the time, or should it rather be conceived as a primarily holistic phenomenon? Further, is the proper object of psychology an internal "psychical individual" or rather a "corporeal individual" (Ash, 1995: 26), and what, exactly is the relation between the mental faculties of sensation and judgment?

In addition to these more science-internal disputes, the rise of experimental psychology was also constantly subject to disputes regarding its philosophical significance. To what extent did the new psychologists really deliver – or at least promise – a transformation of philosophy? Were the positivists, represented by the likes of Auguste Comte (1830), correct to reject the legitimacy of metaphysical questions on the grounds that they cannot be answered by natural science? Can phenomena such as mathematical and logical truths really be adequately explained by appeal to empirical and psychological principles?

We see here, in nascent form, several of the foundational issues that would continue to haunt the mind sciences throughout the 1900s and up to this day. This, of course, is not to deny that there have been significant developments giving rise to new problems and new theories over the last 150 years. For instance, the rise and fall of behaviorist psychology in the first half of the 1900s, and the emergence of cognitive science in the mid-1900s are events that certainly have contributed to the shape of contemporary mind science.[8] At the same time, these later developments can in many ways be understood as ways of approaching these initial issues, such as the psychophysical problem, the relation between psychology and physiology (neuroscience), the significance of first-personal experience, and the relation between philosophy and experimental science. The same holds for the contemporary state of mind science, where, for instance, many of the main differences between the enactive approach and competing views can be understood in light of the field of problems that emerged with the birth of experimental psychology.

In addition to this persisting influence on the field of psychology, the state of affairs sketched in this prelude was also crucial for the emergence of phenomenology. To begin to see this, let's first turn to the most direct forefather of the phenomenological movement: Brentano's descriptive psychology.

[8] I say more about these events in chapter 7.

4
Brentano's descriptive psychology

Franz Brentano was a key player in the 19th-century evolution of psychology in Germany (Huemer, 2019). He is also a central source of inspiration for two historical threads relevant for the phenomenological movement. Most famously, he was the teacher of Edmund Husserl, the undisputed father of phenomenological philosophy. Indeed, Husserl once called Brentano his "one and only teacher in philosophy" (Spiegelberg, 1971: 28), and there is no doubt that Brentano's influence is present in Husserl's phenomenology. Secondly, Carl Stumpf, an older student of Brentano, took Brentano's ideas in a different direction and became a significant force in the development of experimental psychology. From 1894 Stumpf was the director of an increasingly influential psychological laboratory at the University of Berlin, where all the founders of Gestalt psychology – whose works, as we'll see in chapter 6, greatly impacted Merleau-Ponty's philosophy – received their training as experimental psychologists (Ash, 1995: x).

Over the next few pages, I'll give a brief presentation of three *motifs* from Brentano's philosophy that are central for understanding the direction phenomenology takes in the works of Husserl. First, I introduce Brentano's distinction between descriptive and explanatory psychology (4.1), then I take a closer look at the method of Brentano's descriptive psychology (4.2), before ending with an outline of his concept of intentionality (4.3).[9]

4.1 Descriptive psychology

Descriptive psychology – or, as he called it on at least one occasion, descriptive *phenomenology* (Brentano, 1982/1995a: 137) – served a double purpose for Brentano. Not only was it going to establish psychology as a properly scientific discipline; it was also, in line with the ambitions of 19th-century psychology we encountered in the previous chapter, intended as the point of departure for a "scientific renewal" of philosophy (Spiegelberg, 1971: 33). This idea can be understood in light of the positivist ideas popular in the 1800s; it subscribes to some of their spirit, while breaking with their overall view of philosophy. Like the positivists,

[9] Let me emphasize that much of my presentation of Brentano in this chapter relies on secondary sources, especially on Spiegelberg's (1971) rendering. The chapter is not in any way intended as a self-standing scholarly contribution, but only as a way of presenting themes that are relevant for understanding the progress of the phenomenological movement that we'll trace in subsequent chapters.

Brentano held that "the true method of philosophy is none other than that of natural science" (quoted in Spiegelberg, 1971: 33). *Unlike* the positivists, however, he believed that this limitation of philosophy does not destroy the possibility of obtaining genuine metaphysical knowledge.

A former priest disillusioned by the dogmatism of the church, Brentano saw an urgent need for philosophy to fill the gap left by religious institutions' inability to give satisfying answers to metaphysical, moral, and religious questions troubling modern humans (ibid: 33n1). Indeed, according to Spiegelberg, questions about the mind-body relation and the possibility of immortality were the main driving forces behind Brentano's philosophizing, although he never published explicitly on these matters (1971: 34). Hence, as is the case with all philosophy, Brentano's thought was motivated by forces present in his personal and historical situation. On the one hand, he was impressed by the ever-growing evidence of natural science's superior ability to accumulate knowledge and convinced that philosophy ought to adopt a similar method. On the other, he was dissatisfied with the failure of both traditional religion and natural science to provide answers to the deeper questions of humanity in this new era of our history.

Brentano defined descriptive psychology in contrast to what he called *explanatory* (or genetic) psychology, which is the domain of experimental psychology. In making this distinction, he thought himself consistent with established practice in natural science, where it is not uncommon to find distinctions between descriptive and explanatory subdivisions within a field (Brentano, 1982/1995a: 8).[10] The descriptive task is here to identify and describe the various phenomena making up a given field's subject matter, while the explanatory subdiscipline aims to uncover the causes of and causal relations between these phenomena. Hence, descriptive psychology is the name for the project of identifying, describing, and clarifying psychological phenomena. In Brentano's words,

> [i]ts aim is nothing other than to provide us with a general conception of the entire realm of human consciousness. It does this by listing fully the basic components out of which everything internally perceived by humans is composed, and by enumerating the ways in which these components can be connected. (1982/1995a: 4)

[10] Brentano occasionally called his descriptive psychology *psychognosy* in order to emphasize this continuity with other disciplines: "In the same way as orognosy and geognosy precede geology in the field of mineralogy, […] psychognosy […] must be positioned prior to genetic psychology" (1982/1995a: 8).

As is clear from the phrase "internally perceived", the subject matter of Brentano's descriptive psychology is the experiential, or first-personal, manifestation of consciousness (more on this below). Thus conceived, descriptive psychology is a *pure* psychology, in the sense that its research is concerned solely with this internally perceived subject matter and does not refer to any third-personal (i.e., physiological, physico-chemical) processes (ibid.). The domain of *explanatory* psychology, on the other hand, does include such processes, insofar as they can figure in causal explanations of mental phenomena.

The doctrines of descriptive and explanatory psychology are, on Brentano's view, "essentially different" (1982/1995a: 7) – they require different methods and yield different kinds of knowledge. This clear-cut division of labor does however not preclude the possibility of them being beneficial to each other. In his words, an explanatory psychologist without descriptive psychological knowledge "is like a physiologist without anatomical knowledge" (1982/1995a: 10). In other words, without descriptive psychology, explanatory psychology would not know what it was explaining. This makes descriptive psychology the more basic and primary of the two enterprises. But the descriptive psychologist can also learn from explanatory approaches. Brentano considers a number of ways in which explanatory psychology can inform descriptive psychology (ibid.: 8-10). From these examples it is clear that the value of explanatory psychology for the descriptive project is mainly instrumental. That is, the idea is that knowledge of the causal underpinnings of modes of consciousness (e.g., eye physiology for visual consciousness) can be used to arouse and maintain variations of experiences that can become subject to descriptive psychological study. In other words, the two domains are here still strictly separate: knowledge from the explanatory domain does not *enter into* the domain of descriptive psychology; it only helps descriptive psychologists to *access* aspects of their domain, a domain that remains 'pure' in the sense of not containing any third-personal elements.

This idea of descriptive psychology is a clear precursor to phenomenology as it figures in the phenomenological movement. In the first edition of *Logical Investigations,* where Husserl first launched his idea of phenomenology, he explicitly characterized the 'phenomenological' part of the book as a work in descriptive psychology (Moran, 2001: xxxiv; Spiegelberg, 1971: 102). And though he, for reasons we'll look at in the next chapter, was quick to regret this, insisting that phenomenology is *more* than mere psychology, he maintained throughout his career that the phenomenological project also involves a 'phenomenological' or 'eidetic' psychology, suited to serve a similar role to that Brentano ascribes to descriptive

psychology (see 5.5 below).[11] This function of phenomenology is key to understanding its significance for contemporary mind science, including the role it plays within the enactive approach. Phenomenology, that is, offers accounts of psychological phenomena that can serve as conceptual frameworks and *explananda* for the explanatory efforts of mind science. But while phenomenology in this way can serve a similar function to what Brentano envisaged for his descriptive psychology, the underlying method and concepts of the two approaches are, as we'll see, significantly different.

4.2 Method

In stating that philosophy's true method is that of natural science, Brentano did not mean that philosophy everywhere should adopt an experimental or a purely formal or mathematical approach. As Huemer observes, "[f]or Brentano, a method counts as scientific as long as it fulfills the minimal requirements of applying observation, description of facts, and induction" (2019). These, then, were the general criteria from which Brentano's descriptive psychology was going to emerge (see Brentano, 1874/1995b: 33-55; 1982/1995a: 31-78). However, even though he found the idea of a descriptive science to be vindicated by the practice of natural science, he was well aware that the subject matter of his descriptive psychology is far less tangible than that of the other sciences. As Spiegelberg aptly puts it, the descriptive psychologist is "faced with the problem of how to confine and how to divide his sprawling, elusive, and amorphous territory" (1971: 37). In other words, before one can get to the task of describing mental phenomena, one must first figure out how to identify and delineate the structures and areas of the psychological domain in the first place. How, that is, do we go about describing the contents of 'inner perception'?

To understand Brentano's answer, we must first look a bit closer at his idea of inner perception. For Brentano, to be in a conscious mental state necessarily involves a form of awareness of that state itself.[12] This awareness is not a second mental state added to the first,

[11] For instance, Husserl argues that experimental psychology would be made "incomparably more fruitful" with the help of a "phenomenological founding" (1971/1980: 42). And in line with Brentano's idea of the instrumental significance of explanatory psychology for descriptive psychology, Husserl also acknowledges that the "excellent instrumental means of the psychological experiment" in turn can help generate "material" useful for the phenomenologist (ibid.: 45).

[12] The fact that mental acts involve a type of self-reference was noted already by Aristotle in *De Anima* (2008: 75/425b). It has also been a central topic for many phenomenologists, and has in recent years been extensively treated by Zahavi under the label "pre-reflective self-awareness" (2003; 2004a; 2013).

but an intrinsic feature of the original state. In Brentano's words, "[t]he presentation of [e.g., a] sound and the presentation of the presentation of the sound form a single mental phenomenon […] In the same mental phenomenon in which the sound is present to our minds we simultaneously apprehend the mental phenomenon itself" (1874/1995b: 98).[13] This apprehension of "the mental phenomenon itself" is inner perception.

According to Brentano, inner perception is immediate, self-evident, and infallible (1874/1995b: 26, 70). Although I can always be wrong about the external objects I perceive (whether, for instance, it really *is* the sound of a car that I'm hearing), my inner perception (that it *seems to me* that I'm hearing a car) never fails. This infallible awareness, moreover, is *unthematic* and secondary; it is possible "only 'in the margin' (*nebenbei*), while our main attention [is] turned towards external objects" (Spiegelberg, 1971: 38; Brentano, 1874/1995b: 98). As soon as we turn our thematic attention to our own mental state, it becomes the primary object of our consciousness, and now our inner perception becomes the unthematic and immediate awareness we have of being in this new mental state.

This presents the descriptive psychologist with a problem: if inner perception is the only reliable access to mental phenomena, and this access is necessarily unthematic, it means that it is *impossible* for us to reflectively and adequately capture our psychological life *in action*, so to speak. Any such attempt will necessarily be *too late*, obscuring the subject matter by substituting a marginal awareness with an act of conscious observation. This, Brentano acknowledges, puts psychology "at a great disadvantage compared with the other general sciences" because "[a]lthough many of [them] are unable to perform experiments, […] none of them is incapable of making observations" (1874/1995b: 26).

Brentano deals with this problem by appealing to *memory*. As he sees it, even though inner perception is necessarily immediate and unthematic, it leaves traces in our immediate memory that can serve as basis for the descriptive psychologist's observations (ibid.).[14] By making the access to mental phenomena indirect in this way, we reintroduce the possibility of error; memory, after all, cannot be said to be infallible. This, of course, need not be a problem – fallibility is after all not an obstacle for qualifying as a science.

A more serious worry is the introspectionist flavor of Brentano's proposal. Introspection, after all, tends to be regarded as an inherently unreliable and unscientific method,

[13] Zahavi (2004a) led me to this quote. See Antonelli (2022) for a recent discussion of Brentano's concept of inner perception.
[14] This is an idea he claims to find also in other philosophers, in particular in the writings of John Stuart Mill (Brentano, 1874/1995b: 26).

since its domain presumably is completely subjective and hence beyond reach of objective validation.[15] Now, if by introspection we mean *direct* observation of our own inner mental states, Brentano's idea of inner perception as necessarily unthematic excludes the possibility of introspection in principle. However, to study the traces of inner perception in our immediate memory is clearly still a form of inner observation and is as such faced with the same challenges concerning objective validation as classical conceptions of introspection. Brentano was not unaware of this problem. As he says, the mental life of each human being is unique, just as each of us, as observers of our own mental lives, are unique, "and no one else is in a position to check [our] observations" (1874/1995b: 28). For this reason, "[t]he experimental foundation of psychology […] would always remain insufficient and unreliable, if this science were to confine itself to the inner perception of our own mental phenomena and to their observation in memory" (ibid.). The way out of this hurdle is to recognize that we also have an indirect access to others' mental phenomena as they are expressed in their behavior – especially in verbal communication, where the possibility of mutual intelligibility concerning talk of mental states proves that elements of mentality are intersubjectively shared (ibid.). Hence, the descriptive psychologist should proceed through a combination of observations of their own traces of inner perception in memory and observations of and communication with others.

The recognition of this significance of encounters with other human subjects for the project of describing the 'lived' or 'internal' dimension of consciousness is, as we'll see, retained in the phenomenological movement, and will be especially important for understanding Merleau-Ponty's notion of the mind as a structure of behavior. In many other respects, however, the methodology of Brentano's descriptive psychology differs quite significantly from that of phenomenology.

[15] As Schwitzgebel (2019) observes, introspection has been a method employed by philosophers throughout the history of philosophy. The aforementioned positivism of Comte (1830) involved an influential critique of introspectionist philosophy, which defined how the topic was dealt with by later figures, including Brentano. In the context of early experimental psychology, introspectionism is associated with figures such as Wilhelm Wundt (1874) and Edward B. Titchener (1910). The introspectionist movement in psychology came to a halt with the rise of behaviorism through the 1920's and 1930's, and while the birth of cognitive science marked a rejection of behaviorism in favor of *cognitivism* (I say a bit more about this in ch. 7), the behaviorists' skepticism toward introspection was retained. Phenomenology is occasionally criticized for being an introspectionist philosophy (e.g., Dennett, 1991: ch. 3; 2001; Metzinger, 2003), despite phenomenologists' repeating insistence on the differences between phenomenology and introspection. See Zahavi (2017: ch. 1) and Belt (2020) for two recent responses to such critiques, and Varela and Schear (eds., 1999) for a compilation of articles considering both phenomenological and introspectionist approaches to the science of consciousness. Though I do not discuss it at length, the issue of introspection is addressed explicitly in A2 and A3 and is also implicitly in play in the methodological discussions of A1 and A4.

One such difference has to do with what we can call a – from phenomenology's perspective – *too empiricist* inclination of Brentano's method. To see this, we can begin by noting that Brentano, in the foreword to his *Psychology from an Empirical Standpoint* (1874/1995b), states that "a certain ideal point of view," or ideal intuition (*ideale Anschauung*), is "entirely compatible" with his empiricist idea that "experience alone is my teacher" (ibid.: xxv). He does not explain this idea of ideal intuition further, but, as Spiegelberg notes, it is demonstrated in practice in the sense that Brentano's investigations are "based largely on a consideration of idealized types [of psychological phenomena] rather than on detailed observation and compilation of concrete cases with all their complexities" (1971: 35). Hence, the kind of description involved in Brentano's descriptive psychology is not primarily descriptions of concrete and individual phenomena, but rather of general *types* of psychological phenomena, accessed by abstraction from concrete experiences.

For our purposes, the key point here is that Brentano understands ideal intuition as a form of generalization or induction that simply picks out what is shared by a set of particular examples stemming from 'empirical' observation of actual experiences (Brentano, 1982/1995a: 73ff.). In Husserl, in contrast, we find the idea of *Wesenschau* (intuition of essences). As we'll see in 5.2 below, this is the method of engaging in an imaginative 'eidetic' variation of phenomena so as to grasp their *necessary* and *invariant* features. Thus allowing for a different form of reasoning than abstraction and induction from empirical observations, this signals a turn away from the classical empiricist commitments of Brentano's project that, as we'll see later, also characterizes other parts of Husserl's phenomenology.

4.3 Intentionality

In addition to the issue of methodology, another crucial question for the project of descriptive psychology is what concepts one should use to make sense of psychological phenomena. The most fundamental question here is how we should define psychological phenomena in the first place – i.e., what, if anything, distinguishes psychological phenomena from phenomena that are not psychological? Brentano's answer, famously, is the characteristic that has come to be known as *intentionality*:[16]

[16] Brentano (1874/1995b: 59-68) considers five additional criteria for distinguishing psychological phenomena from physical phenomena, but intentionality is the only *positive* criterion he identifies.

> Every mental phenomenon is characterized by what the Scholastics of the Middle Ages called the intentional (or mental) inexistence of an object, and what we might call, though not wholly unambiguously, reference to a content, direction toward an object (which is not to be understood here as meaning a thing), or immanent objectivity. Every mental phenomenon includes something as object within itself, although they do not all do so in the same way. In presentation something is presented, in judgement something is affirmed or denied, in love loved, in hate hated, in desire desired and so on. This intentional in-existence is characteristic exclusively of mental phenomena. No physical phenomenon exhibits anything like it. We can, therefore, define mental phenomena by saying that they are those phenomena which contain an object intentionally within themselves. (1874/1995b: 68)

In other words, psychological phenomena are defined by the property of being *directed at* or *referring to* objects. Such referential acts, then, are the proper domain of study for descriptive psychology, which now can be construed as a science investigating the various acts by which we psychologically refer to objects. Brentano went on to distinguish three basic natural classes of such acts: presentations, judgments, and emotions (ibid.: 152).

It is not necessary for our purposes to go into the details of this model. Let's rather note two more general worries that tend to be raised against Brentano's notion of intentionality as presented here. First, though it seems correct that *many* psychological phenomena are characterized by reference to objects, there also seem to be many psychological states – e.g., moods and feelings – that do *not* exhibit this characteristic. Acknowledging this challenge, Brentano handles it by appealing to his idea of inner perception. Even though not all psychological states involve reference to *external* objects, he claims, they nonetheless always involve reference to *themselves* as objects of inner perception (ibid.: 69). Hence, feelings of pain may not refer to anything outside the feeling itself, but they are still not entirely *without* an object, for *qua* psychological phenomena they are their own objects. This idea admittedly has the flavor of an *ad hoc* solution, for it is not clear what other reason there is to use the term 'object' in this unconventional and unintuitive way other than to save the thesis of intentionality as essential to *all* psychological phenomena.

Secondly, Brentano seems to say that even 'external' objects of psychological intentions are in fact *internal* to the psychological phenomena in question. This, at least, is a common interpretation of Brentano, and it is suggested by his talk, in the above quote, of these objects' "inexistence" (i.e., existence *in*) and their being contained "within" mental

phenomena.[17] One serious problem with this model is that it seems to entail a "duplication of the object" (Huemer, 2019). That is, in cases where we are apparently directed at objects in the real world (e.g., my perception of the cup in front of me), Brentano would seemingly have to say that we are not *actually* directed at those objects, but rather at mental 'duplicates' of them. This would mean that different people can never really be directed at the same objects: when my friend and I play a game of chess, our acts of thought and perception are not – really – directed at the same, physical board in front of us. Rather, they are directed at our own individual and internal duplicates of it.

When Husserl appropriated the term 'intentionality' from Brentano and made it a centerpiece of the phenomenological view of the mind, he substantially reworked its meaning, making it, among other things, avoid both of these worries. Thus, Husserl did not see intentionality, understood as reference to an *object*, as essential to all mental phenomena (Spiegelberg, 1971: 107), and he also rejected the thesis that all mental phenomena, *qua* conscious, necessarily have *themselves* as objects (Zahavi, 2004a).[18] Further, intentionality on Husserl's view is a *relational* phenomenon, an actual *directionality* of consciousness towards something other than itself, rather than a state of containing an object within itself. In the next chapters, we'll see how this idea develops toward the idea of the mind as a dynamic process of *co-constitution* of embodied agent and meaningful environment that we find in the enactive approach.

A further significant difference between Brentano's and Husserl's notions of intentionality has to do with the former's Cartesianism. For Brentano, that is, reality consisted of two types of things: physical phenomena and mental phenomena (1874/1995b: 59). Intentionality then becomes a property that distinguishes the mental from the physical, and descriptive psychology becomes the study of the mental realm *as opposed to* the physical realm. As we'll see below, a key move in Husserl's phenomenology is the recognition that this opposition of the mental to the physical is a presupposition that we would want not to be committed to in a truly pure and descriptive study of consciousness and its phenomena. For

[17] To be fair, Brentano later rejected this interpretation (Huemer, 2019), but it is nonetheless clear from its reception that his initial formulation of this idea lent itself too easily to such a reading.
[18] I emphasize that what Husserl rejected was that intentionality understood as reference to *objects* is a necessary characteristic of all mental phenomena, because he seems to hold that intentionality more broadly construed as the property of *meaning* something or being *of* something is a necessary feature of all conscious processes. As he states in *Cartesian Meditations,* "without exception, every conscious process is, in itself, consciousness *of* such and such [… it] '*means*' *something or other*" (1931/1973: 33; orig. emphasis). Merleau-Ponty expresses a similar thought with his claim, aimed against the empiricist idea of 'pure' sensations, that "everything has a sense" (2012: lxxxiii).

Husserl, Descartes' "division of nature and spirit" was the ultimate foundation for the naturalistic forms of psychology that he attacked throughout his career (1954/1970: 62). As we'll see in the next chapter, Husserl's main idea here is that consciousness should not primarily be conceived as an object existing alongside or in addition to physical objects, but rather as the field wherein all objects appear as such.

4.4 Summary

With this brief presentation of Brentano's descriptive psychology, we have started to get a clearer view of some of the driving issues for this dissertation. In particular, we have encountered the idea of a discipline meant to provide both a foundation for explanatory efforts in psychology and a renewal of philosophy. This idea is, as mentioned, the forerunner to Husserl's phenomenology, with the foundational role for psychology being preserved in his idea of phenomenological or eidetic psychology. We have also seen how naturalistic and empiricist inclinations informed the methodology of Brentano's descriptive psychology, and I've hinted that we'll see Husserl pursue a somewhat different path. Lastly, we encountered the concept of intentionality, which is crucial to Brentano's view of mentality, and which will continue to be central – albeit in revised and enriched forms – for the concept of subjectivity that emerges through the enactive-phenomenological movement. Much more could, of course, be said both of Brentano's philosophy and its relation to phenomenology.[19] For our purposes, however, these *motifs* are sufficient. In what follows, we'll see how the phenomenological movement both carries on and surpasses the project of descriptive psychology.

[19] See Fisette (2018) for more on the relation between Husserl's phenomenology and Brentano's descriptive psychology.

5
Husserl's phenomenology
From anti-psychologism to the paradox of subjectivity

When we now turn to the philosophy of Husserl, we enter the territory wherein many of the foundational concepts of enactive phenomenology have their origin. Due to this central significance of Husserl's phenomenology, we're going to delve a bit deeper into the details here than in the earlier chapters. The main purpose of this chapter's investigations is to provide some more clarity to the following questions: What is phenomenology? What is the relation between phenomenology and naturalism? What is the relation between phenomenology and psychology? What is the phenomenological concept of subjectivity?

In approaching these questions through an exploration of Husserl's works, my idea is not that Husserl necessarily has the final word on all these issues. Defining phenomenology as a dogmatic Husserlianism would, after all, contradict the idea of phenomenology as a *moving* philosophy. Husserl does, however, have the *first* word on these issues, and is as such a key for making the ensuing developments of phenomenology more understandable. That said, the reading of Husserl I'm pursuing in what follows is one that focuses more on the continuities than the breaks between his works and the later stages of phenomenology's development relevant for us here. Thus I've tried to show, where relevant, how much of Merleau-Ponty's phenomenology and enactive phenomenology that is actually present already in Husserl's works.

I begin where Husserl's phenomenology began – with his *Logical Investigations* (1900-1901/2001). First, I briefly present the book's anti-psychologistic mission, before moving on to show how the phenomenological perspective is established against this background (5.1). Seeing how phenomenology in this way from the very start was defined in opposition to a form of naturalism is a good way to get an initial grasp both of the nature of phenomenology and its relation to naturalism and psychology. Next, I introduce some of the methodological elements of phenomenology as it was developed by Husserl after the *Logical Investigations,* first with a section on correlational analysis and eidetic variation (5.2) and then one where I present the phenomenological reduction, which is crucial for understanding the idea of transcendental phenomenology (5.3). This puts us in position to take a closer look at the naturalism issue, which I do in the subsequent section (5.4). After that, I turn to Husserl's idea of phenomenological psychology, emphasizing Husserl's own insistence on the close relation

between this project and that of transcendental phenomenology (5.5). Ending that section with a discussion of the *paradox of subjectivity* – i.e., the fact that the subject is both an empirical subject *in* the world and a transcendental subject *for* the world – which is revealed by its lending itself to both of these approaches, I then embark, lastly, on an exploration of some key components in Husserl's view of subjectivity (5.6). Focusing on the significance of temporality, embodiment, and intersubjectivity, I aim to show how Husserl's own analyses indicate a notion of subjectivity that can neither be apprehended as a pure subject nor as a pure object, and which as such lays the ground for Merleau-Ponty's – and consequently the enactive – view of the mind.

5.1 Anti-psychologism and phenomenology in the *Investigations*

The relation between phenomenology and psychology is one of the underlying topics of this dissertation, and it is also a theme that flows through the whole of Husserl's authorship. Indeed, according to Spiegelberg, "[o]ne of the most important needs in the understanding of Husserl's philosophy is the clarification of the relationship between his phenomenology and psychology" (1971: 149). In short, this is because Husserl, on the one hand, is known for his stark criticism of the psychology of his day and his efforts to distance phenomenology from psychology, while, on the other, his philosophy evidently is *close* to psychology in the sense that it is based on studies of experience.

Anti-psychologism

We can begin to understand this apparent tension with a look at the work that first launched Husserl's conception of phenomenology – his *Logical Investigations* (1900-1901/2001). Here, Husserl's main aim was to offer a clarification of the epistemological and conceptual foundations of logic and mathematics. A key part of this project consisted in an extensive critique and rejection of *psychologism*.

Broadly speaking, psychologism is the idea that logic can be explained in terms of psychology, or, in other words, that logical research in reality is nothing but research on specific features of how the human mind works. This means that the laws and truths of logic ultimately can be accounted for in terms of psychological facts. For instance, a representative of psychologism might argue that such-and-such traits of human minds make it so that it tends to be difficult for us to explicitly believe two contradictory things (P and not-P) at the same time, and claim that this explains the principle of non-contradiction. Or, alternatively, they might claim that logic is founded on inductive inferences from empirical observation, meaning that

logical truths and principles are merely results from generalizations of features encountered across a range of particular experiences. John Stuart Mill, whose works were immensely influential in both Anglophone and German philosophy in the 1800s, advocated for the latter position.

The psychologistic spirit was also, as we saw above, central to the emergence of experimental psychology in mid-19th century Germany. Brentano, too, can be seen as at least a partial representative of psychologism. This because his view that reality consists solely of physical and psychical things means that logic, epistemology – indeed, every science that is not a physical science – has its foundation in psychology (Spiegelberg, 1971: 50). In contrast to the main targets of Husserl's critique in *Logical Investigations*, Brentano did however not attempt to derive the laws of logic from psychological laws (ibid.: 49). Even Husserl himself displayed clear psychologistic tendencies in his first book, *The Philosophy of Arithmetic* (1891/2003), where he, in his own words, was guided by "the prevailing assumption that psychology was the science from which logic in general […] had to hope for philosophical clarification" (1900-1901/2001: 2). His own dissatisfaction with the approach of that work, as well as a devastating review by Gottlob Frege, led Husserl to pursue a somewhat different path in *Logical Investigations.*

The main problem with the forms of psychologism Husserl attacked in *Logical Investigations* is that they entail a relativization of or skepticism about the validity of the laws of logic. That is, if we explain logical laws in terms of psychological laws, and psychological laws merely describe contingent features of how the minds of humans work, then logic's claim to necessity and universality seems to be ungrounded. This is especially problematic for the sciences, which presuppose the validity of logical laws in their strive towards inferential consistency and objective results. In other words, if logic can be derived from empirical psychology, then (both mathematical and natural) science is based on shaky foundations.

Importantly, to reject psychologism does not mean that one rejects *every* form of dependency relation between logic and psychological factors. After all, our knowledge and thoughts about logical entities are clearly achievements of our human minds, and must as such be enabled by configurations of and happenings in our minds considered psychologically. Husserl also acknowledges that we "[u]ndoubtedly" come to know logical laws through concrete experiences (1900-1901/2001: 54). Where psychologism goes wrong is when it takes these kinds of psychological conditions for our ability to think and know logic as that which *justifies* our accepting the claims of logic. In Husserl's words,

> one should not confuse *psychological* 'presuppositions' and 'bases' of the *knowledge* of a law, with the *logical* presuppositions, the grounds and premisses, of that *law*: we should also, therefore, not confuse psychological dependence (e.g. dependence of origin) with logical demonstration and justification. (1900-1901/2001: 54; orig. emphases)

Thus, our grasping of the principle of non-contradiction might very well presuppose a certain configuration of the human *psyche* and the undergoing of a range of concrete experiences, but these are not the factors that make the principle valid as a law of logic.

This rejection of psychologism is indicative of some of the spirit behind the wider critique of naturalism found in Husserl's further development of phenomenology, which we'll have a closer look at below (5.4). Where psychologism is the idea that psychology, understood as an empirical science of the human mind, can provide a foundation for logic and epistemology, naturalism (as understood here) is the more general idea that all of philosophy should abide by the metaphysical and methodological principles determined by the natural sciences. The objection, in short, is that this form of naturalism amounts to an overestimation of the significance and scope of natural science, which – like psychologism's handling of logic – is bound to obscure or undermine the sense and validity of phenomena belonging to the domain of philosophy. As mentioned in the introduction, this opposition between phenomenology and naturalism is one of the driving issues of this dissertation and is particularly pertinent in the context of the project of 'naturalizing phenomenology' central to the enactive approach. To understand this issue better, we must turn to the positive contribution of *Logical Investigations* – phenomenology.

Discovering the phenomenological field

Husserl's key idea was this: if we want to properly understand the meaning and validity-foundations of a phenomenon – e.g., a logical or mathematical entity – we must study the *experiences* or *intuitions* by which the phenomenon in question is presented to us.[20] In this way, Husserl's approach bears similarities to earlier empiricist and psychologistic approaches. An important difference is however that Husserl did not understand experience simply as an

[20] 'Intuition' (*Anschauung*) is the word Husserl tends to use. It should be understood not in its colloquial sense of 'vague hunch,' but rather as the *presentation* of something to consciousness. In what follows, I'll use the word 'experience' broadly to apply to all forms of conscious episodes, meaning that also the cognitive grasping of things such as logical and mathematical truths will count as experiences, even when they are not *empirical* experiences. Husserl's notion of *Anschauung* has been criticized by later figures in the phenomenological and hermeneutic tradition for presupposing an unwarranted immediacy in our relations to objects. I'll not engage in that debate here, but see Solli (2017: 121 ff.) for a discussion of Gadamer's critique of Husserl on this account.

encounter with contingent and empirical states of affairs, but as a potential source for insight into *essences*. As he says, his phenomenology "has, as its exclusive concern, experiences intuitively seizable and analysable in the pure generality of their essence, not experiences empirically perceived and treated as real facts" (1900-1901/2001: 166). The reasoning is as follows: For any object to be an object for us, it must manifest as the correlate of an act of experience. Or, in other words, for every possible intentional object (what Husserl would later dub *noema*), there corresponds an intentional act (*noesis*) through which the object manifests for us.[21] Now, Husserl's thought goes, if we reflect on this act-object (or noesis-noema) structure as it pertains to a specific kind of object (such as a logical entity), it becomes possible to discern structural features that necessarily *must* be in place for any experience to be an experience of the kind of object in question. By thus grasping the 'pure' experience to which the object in question corresponds (i.e., the act-object structure stripped of all but its essential and necessary features), we simultaneously enable insight into the pure and essential meaning of the object as that which reveals itself through this essential experiential structure.

Though experience is central to both, phenomenology in this way differs radically from psychologism. For, where psychologism attempts to reduce the status and validity of logical entities to factors *external* to their manifestation as ('apparently') universal and necessary laws for thought, such as contingent configurations of the human mind or inductive conclusions from concrete empirical experiences, phenomenology aims to account for the essential features *internal* to logical entities' manifestation as such. As Husserl puts it in what has become a defining slogan for the phenomenological movement, "we must go back to *the 'things themselves'*" (1900-1901/2001: 168; my emphasis). Rather than *explaining* things in terms of something else, the phenomenologist strives for a *descriptive elucidation* of things' meaningful appearance *as what they are*, as revealed in the pure experiences wherein the things show themselves in their essence. From this perspective, the psychologist is welcome to account for

[21] See Husserl (1913/2012, ch. 3) for an elaboration of the notions of *noesis* and *noema*. There are different interpretations of Husserl's notion of *noema* in the literature. Two schools are especially influential. One, advocated by Dagfinn Føllesdal (1969) and associates (e.g., Dreyfus, 1982; McIntyre, 1986; Carman, 2003), sees Husserl as committed to a view of the *noema* as an internal, semantic *mediator* between the subject and the external object it intends. The idea is that Husserl's notion of *noema* is analogous to Frege's notion of *sense* (*sinn*), for which reason this interpretation is known as the *Fregean* interpretation of Husserl's notion of intentionality (the 'West Coast interpretation' is another name). The other school – defended by figures such as Drummond (1990), Sokolowski (1984), and, more recently, Zahavi (2017: 82 ff.) – sees the *noema* as a mode of presentation of the ('external') intended object *itself* (this is known as 'the East Coast interpretation'). Without going into the details of this debate, let me just state that my sympathies lay with the latter interpretation – an interpretation also embraced by Thompson in his enactivist classic, *Mind in Life* (2007: 415).

the contingent conditions that enable our knowledge of logic, but nowhere in these accounts will the *essence* of logic – and hence the foundations for its validity – be found. That, rather, can only be discovered by a study of the *phenomena* of logical entities as such and their corresponding pure acts of experience, i.e., by phenomenology.

This, then, marks Husserl's first contact with the phenomenological domain. Throughout the rest of his career, he labored to work out the significance of his discovery and the appropriate method for accessing it. When it comes to the significance of phenomenology, we saw earlier that Husserl in the first edition of *Logical Investigations* labeled phenomenology a form of *descriptive psychology*. In a note addressing the apparent tension between, on the one hand, rejecting psychologism and, on the other, making descriptive psychology the foundation for logic, Husserl in the first edition makes the point that "pure description" – i.e., phenomenology as descriptive psychology – "is merely a preparatory step towards theory, not theory itself" and hence that "[o]ne and the same sphere of pure description can […] serve to prepare for very different theoretical sciences (1900-1901/2001: 176). The idea is that, although psychology (as theory of mind) and the theory of pure logic share the same primary source of evidence, they are nonetheless radically different types of theory and are as such irreducible to each other: "It is *not the full science of psychology that serves as a foundation for pure logic*, but certain classes of descriptions which are the step preparatory to the theoretical researches of psychology" (ibid.; orig. emphasis). Already in this note, however, Husserl recommends that "it will be good if we rather speak of 'phenomenology' than of descriptive psychology" (ibid.: p 177), so as to avoid confusion with some at that time widespread conceptions of the name 'descriptive psychology'.

When the second edition of *Logical Investigations* was published in 1913, the note just quoted from had been replaced by one in which Husserl explicitly states that "phenomenology is *not* descriptive psychology" (ibid.: 175; my emphasis).[22] In the time between the two editions, Husserl had arrived at a different conception of his discovery: phenomenology was to be conceived, not as a species of psychology, but as a *science of essences,* or *transcendental phenomenology* (1913/2012: 3). The idea, in short, was that this phenomenology does not, like psychology, deal with empirical facts and realities pertaining to our human *psyche*, but rather with the essential structures that underlie, among other things, the appearance of facts and realities in the first place, and as such promises to deliver a genuine *first philosophy* – a

[22] More precisely, Husserl states that "*if psychology is given its old meaning*, phenomenology is not descriptive psychology" (ibid.; my emphasis), indicating that he was still open to phenomenology counting as psychology in a 'new' sense.

"rigorously scientific philosophy" (1910/1965: 78) providing the ultimate foundation for philosophy and science. We'll get a better grip on this when we consider the method of the phenomenological reduction below.

5.2 Intentional analysis and eidetic variation

Regarding the issue of methodology, several of the ideas that would later get a more explicit and systematic articulation as parts of Husserl's phenomenological project are implicitly present, at least in germ, already in *Logical Investigations*. Two such ideas are especially central. First, the idea that act and object should be approached as *essentially correlated* so that, although it is possible to focus one's investigation at either 'side' of the correlation (aiming, for instance, to clarify the nature of certain types of intentional acts rather than types of intentional objects), they cannot be grasped in isolation from each other but only in light of their relation. Investigating moments of intentional act-object structures *as* correlated moments of such a structure corresponds to what Husserl later called *intentional analysis* (1913/2012: 204). Whereas Husserl in *Logical Investigations* primarily pursued this form of analysis with the aim of elucidating foundational features of logical entities (i.e., the object-side), the primary focus of his later works was intentional analysis understood as "constitutional investigation" (1931/1973: 65); an investigation, that is, of the necessary structures by which objects, and the world in general, are constituted (i.e., enabled to appear) for consciousness in the first place.

Secondly, the aim to arrive at insights into *essences* in the sense of identifying the features necessary for a given type of act-object structure to be a structure of that kind. Though present and central in the phenomenological work carried out in *Logical Investigations*, the procedure required for generating this kind of insight – "essential seeing" (*Wesensschau*) (Husserl, 1939/1973: 340) – was more systematically clarified later as a form of *free* or *imaginative variation* – sometimes referred to as 'eidetic variation'.[23] As an example, consider how Husserl illustrates this procedure by applying it to perception in his *Cartesian Meditations*:

> Starting from this table-perception as an example, we vary the perceptual object, table, with a completely free optionalness, yet in such a manner that we keep perception fixed as perception of something, no matter what. Perhaps we begin by fictively changing the shape or the color of the object quite arbitrarily, keeping identical only its perceptual appearing. […] we change the fact of this perception into a pure possibility, one among other possibilities – but possibilities

[23] See Belt (2021) for a recent discussion of the method of eidetic variation.

> that are possible perceptions. [This] supplies us with 'pure' possibilities, pure of everything that restricts to this fact or to any fact whatever. […] Thus removed from all factualness, it has become the pure '*eidos*' perception […]. (1931/1973: 70)

In other words, in seeking to gain insight into the essence or *eidos* of a phenomenon, one starts with an example of the phenomenon in question, such as – in the case of perception – an actual or imagined instance of a concrete case of perception (e.g., the perception of a table). Then the task is to imaginatively vary the features of one's example, seeking to identify those that will have to remain *invariant* for the case to still qualify as a case of perception. Starting from the perception of a table, there are a lot of things one can vary while keeping it a case of perception: colors, shapes, one's distance and orientation in relation to the perceived object, etc. We can also change the kind of object that we imagine we are perceiving to any kind of object that can be an object for perception – or, if one is seeking the essence of *visual* perception in particular, to any kind of object that can be visually perceived. One of the things that can't be changed is the *transcendence* of the perceived object – its being presented as exceeding the aspects of it that are given directly to one's senses – and that this transcendence manifests as a *horizon* indicating yet-to-be-perceived aspects of the object (Husserl, 1931/1973: 44). This horizon-structure, then, marks part of the *eidos* 'perception.'

Note the contrast with Brentano's idea of 'ideal intuition' here. According to Brentano's empiricism, we can only ever hope to arrive at contingent, *a posteriori facts* about psychological phenomena. From this perspective, an 'ideal intuition' of perception – i.e., a grasp of the *nature* of perception – has the status of a generalization assembling the features shared by a totality of past and present factually occurrent instances of perception. Husserl, on the other hand, understands his *eidetic* method as generating *a priori* insights pertaining to *necessary* features of the phenomenon in question (1931/1973: 71). Thus, the horizon-structure of perception is not merely a factual trait common to every instance of perception that we know about, but a structure without which perception would not be perception – it belongs, as Husserl says above, to perception as a *pure possibility*. Importantly, the notion of *a priori* at play here should not be understood as denoting a type of insight in principle accessible to reflection *prior to* or in isolation from any actual encounters with objects; it is, after all, a type of insight based on the use of examples, and which pertains to the intentional *correlation* of acts and objects rather than to an isolated subject. Rather, 'essential seeing' is *a priori* in the sense that, to continue with our example, the horizon-structure of perception is a structure belonging to perception as a *possibility*, independently from the contingent matters of fact that characterize

every actual case of perception. Husserl talks about the form of evidence involved here as *apodictic*, meaning that it "is not merely certainty of the affairs or affair-complexes (states-of-affairs) evident in it" but rather is disclosed "as having the signal peculiarity of being *at the same time the absolute unimaginableness* (inconceivability) of their *non-being*" (ibid.: 16; orig. emphasis). In other words, by way of eidetic variation, we discover the *absolute unimaginableness* of a perception without a horizon-structure, and in that way come to grasp *a priori* a necessary feature of perception.[24]

5.3 The *reduction* and transcendental phenomenology

A third methodological concept crucial to Husserl's phenomenology is that of the phenomenological or transcendental *reduction*. This methodological step is essential for Husserl's coming to label phenomenology a *transcendental* rather than psychological enterprise in the years after *Logical Investigations*.[25] The phenomenological reduction involves a reflective shift of attitude, from our natural and everyday attitude of taking the independent existence of the world we experientially encounter for granted, to a *bracketing* of this 'taken-for-granted-ness'. In the natural attitude, Husserl says,

> I find continually present and standing over against me the one spatio-temporal fact-world to which I myself belong, as do all other men found in it and related in the same way to it. This 'fact-world', as the word already tells us, I find to *be out there*, and also *take it just as it gives itself to me as something that exists out there*. (1913/2012: 55-56; orig. emphasis)

This taking of the world to be existing 'out there', which is presupposed by all our everyday activities as well as by every science studying the objective world, is what Husserl calls "the *general thesis of the natural standpoint*" (ibid.: 56; orig. emphasis). The phenomenological reduction involves a "*certain suspension*," "*put[ting] out of action*," or, as said, "*bracketing*" of this general thesis by way of the gesture Husserl calls the phenomenological *epoché* (ibid.: 56-59; orig. emphasis). As Husserl insists, the attitude thus acquired is not one of *denial of*, or *skepticism* toward, the world of the natural standpoint (ibid.: 59). The idea, in other words, is not to reject the general thesis. Rather, it is to take up a certain position with regard to the

[24] According to Merleau-Ponty, phenomenology does not conceive of the *a priori* and the *a posteriori* as belonging to different levels of truth (1945/2012: 229). As we'll see in the next chapter (6.7), this might mark a deviation from Husserl's view.
[25] *Logical Investigations* has no explicit mentions of the phenomenological reduction, except in Husserl's foreword to the second edition (1901-1902/1970: 6).

general thesis that does not take it for granted but rather strives to make its foundations available for reflection. The general thesis is here *preserved*, but in an *altered* form: it does no longer simply work as an unreflectively accepted presupposition for our conscious activities, as it does in the natural attitude, but gains the significance of becoming a *theme for description* – a form of description, that is, which must refrain from making statements about or presuppose anything concerning the natural world as an independent reality, but rather "create for itself a *universe of absolute freedom from prejudice*" (Husserl, 1931/1973: 35; orig. emphasis).[26]

In some of his writings, Husserl uses Descartes' methodological doubt as a model for the *epoché* (1913/2012; 1931/1973). The idea, in short, is that by attempting to doubt everything in a Cartesian fashion, we become aware of something that is left intact by any such attempt; we discover what Husserl calls "a '*phenomenological residuum*'" – a "region of Being" that "remains unaffected" by the *epoché* (1913/2012: 63; orig. emphasis). However, where Descartes posited that which remained intact at the end of his doubting process as belonging to the *Ego cogito*, considered as an individual subjective substance standing over against an only indirectly accessible objective world, Husserl rejects this view as a failure to maintain freedom from all prejudice and as a relapse into the kind of 'natural' or 'objective' thinking that the *epoché* is supposed to bracket. The region of being revealed by the *epoché*, then, is not to be understood as an intra-psychic realm belonging to the individual phenomenologist, for this is a form of interpretation belonging to the natural attitude. Rather, what is revealed is the region of *pure* or *transcendental* consciousness (ibid.), an 'Ego' posited not as a psychological fact but rather as the "*acceptance-basis* of all Objective acceptances and bases" (Husserl, 1931/1973: 26; orig. emphasis).[27] This discovery, Husserl says, marks "the field of a new science – the science of Phenomenology" (1913/2012: 63).

[26] Note that I'm here giving a very simplified rendering of the phenomenological reduction. For Husserl's more differentiated view of the reduction as involving a range of different reductions and suspensions, see e.g., his *Ideas* (1913/2012: § 56-62; see also Depraz, 1999a). There is also more to be said about the relation between the *epoché* and the reduction (Zahavi, 2017: 57-59).

[27] Without going into that debate, let me just note here that Husserl's 'transcendental turn' alienated many of his early followers due to what they saw as a transformation of phenomenology from a realistic to an idealistic philosophy (Spiegelberg, 1971: 170; Parker, ed., 2021). Husserl himself came to hesitantly accept the 'idealist' label towards the end of his career (Spiegelberg, 1971: 142; Zahavi, 2017: 95). He was, however, adamant that his *transcendental* or *phenomenological* idealism was something completely different from Berkeley-style subjective idealisms that see all of reality as dependent upon consciousness considered as *psyche* or mind-thing. One also finds critiques of (elements of) Husserl's transcendental idealism in later phenomenologists such as Scheler (1923/2008), Heidegger (1927/1996), and Merleau-Ponty (1945/2012). See Zahavi (2017: ch. 3) for a defense of Husserl in response to more recent Heidegger-inspired dismissals of Husserl's project.

The task of phenomenology, understood in this way as *transcendental* phenomenology, thus becomes to make understandable the processes by which transcendental consciousness, as the universal basis for the possibility of all meaningful appearance as such, serves this foundational function. This gives a new sense to the eidetic analysis we visited above: as made within the transcendental-phenomenological attitude, our identification of the horizon-structure as part of perception's *eidos* is not to be understood as the discovery of a fundamental property of perception considered as a faculty of the naturally existent human *psyche*, but rather as a structure of transcendental consciousness understood as the constitutive basis for perceptual presence as such.

We can see this as a radicalization of *Logical Investigations'* idea of phenomenology as the descriptive elucidation of objects' givenness to intuition as *what they are*, independently from any consideration about the contingent conditions for their appearance. That is, as long as phenomenology here was conceived as *descriptive psychology*, these descriptions would seem to have the status of pertaining merely to a section of existence within the broader natural world – i.e., to consciousness considered "as an empirical being in the ensemble of nature" (Husserl, 1910/1965: 91). With the phenomenological *epoché*, however, the significance of phenomenological descriptions is 'elevated' to a domain that cannot be thus located, where one does not presuppose the existence of a subjective psychological domain vis-à-vis objective and physical nature, but rather is in position to, among other things, grasp the foundations of the meaningful appearance of psychological and physical phenomena as such.

In this way, transcendental phenomenology assumes the role of the most foundational scientific discipline – a *first philosophy* that provides the foundation for all other intellectual endeavors by descriptively elucidating the structures of transcendental consciousness that constitute (enable the presence of) the phenomena to which these endeavors are directed.

5.4 Naturalism and the naturalization of consciousness

This puts us in position to better grasp the anti-naturalism of Husserl's phenomenology. Let's first look at how Husserl understands the term 'naturalism': "Characteristic of all forms of extreme and consistent naturalism," he says, "is on one hand the naturalizing of consciousness, including all intentionally immanent data of consciousness, and on the other the naturalizing of ideas and consequently of all absolute ideals and norms" (1910/1965: 80). By 'naturalizing' Husserl here means rendering these phenomena as fully graspable in terms of nature conceived from the perspective of natural science, i.e., "nature considered as a unity of spatiotemporal

being subject to exact laws of nature" (ibid.: 79). More precisely, this form of naturalism can be seen as involving both the *methodological* commitment that the methods of natural science represent the only adequate criteria for justification, and the *metaphysical* commitment that the only things that are 'really real' are those that can be accounted for by those means (Zahavi, 2010: 5). This is the view rejected by Husserl. Importantly, this rejection is not intended as a discreditation of natural science. As he says, "[w]hen it is really natural science that speaks, we listen willingly and as disciples" (1913/2012: 38). Naturalism, however, is not natural science itself but a philosophical presumption made on part of natural science – one that, like the psychologism we encountered above, threatens to undermine or obscure the intrinsic sense and validity of the 'essences' we encounter e.g. in logical and mathematical objects. As Husserl says, naturalism thus conceived is ultimately self-refuting: by being guided by such things as the *goal* of arriving at genuine knowledge and the *value* of certain means of justification, it inescapably presupposes ideals and norms, while at the same time subscribing to a view of the world that robs all ideals and norms of any intrinsic validity because intrinsic validity is not a thing that can be known in the way natural science knows nature (1910/1965: 80-81).

From the perspective of transcendental phenomenology, naturalism is a philosophy that has failed to reach a genuinely philosophical standpoint. Drawing its commitments from facts and methods that naively presuppose the general thesis of the natural attitude, it does not manage to really question the *foundations* of the processes by which facts are grasped as such (experience, knowledge, thought).

When it comes to Husserl's critique of 'naturalizing' consciousness, one thing should be noted at the outset: Contrary to the impression one can sometimes get from contemporary Husserlian critiques of 'naturalized phenomenology', Husserl does not reject either the possibility or the value of empirical psychology, in the sense of an experimentally informed science of consciousness considered as a natural phenomenon. One can get that impression, for instance, when Zahavi claims that naturalism's treatment of consciousness "as a real occurrent entity in the world" is "unacceptable" on Husserl's view (2010: 5).[28] On the contrary, however, Husserl affirmatively observes the "self-evident" fact that "the psychical […] reveals itself empirically as bound to certain physical things called bodies" and as such has a place in "the psychophysical nexus of nature (the nexus in which, without question, it occurs)." And he ascribes to psychology the task of "explor[ing] this psychic element scientifically […], to

[28] Though this particular formulation could have been more precise, it is quite clear from the context that what Zahavi means is that it is naturalism's treatment of consciousness *solely* as an object that is unacceptable according to Husserl.

determine it in an objectively valid way, to discover the laws according to which it develops and changes, comes into being and disappears" (1910/1965: 86).

What Husserl deems unacceptable, rather, is the idea that psychology thus conceived can *absorb* philosophy – the idea, as he says, that logic, epistemology, aesthetics, ethics, pedagogy, all the human sciences, and the areas of metaphysics not already covered by physics "have finally obtained their scientific foundation through it" (ibid.: 84). This way of thinking, Husserl argues, "is a victim of a presumably facile confusion between pure and empirical consciousness" (1910/1965: 92). Empirical consciousness, that is, is consciousness as it appears within the natural attitude; it is consciousness as an *object* existing in a way that we naively accept against the background of the general thesis. As a study of empirical consciousness, then, psychology is not directed at the foundations of knowledge, logic, etc., but rather proceeds on the basis of an unquestioned acceptance of those foundations, which is what lets it treat consciousness straightforwardly as a natural phenomenon. For a study of consciousness to be able to shed genuine light on philosophical issues, however, it must be a study of consciousness considered not as an object the natural existence of which is naively presupposed, but as *the field wherein objects are disclosed as such in the first place* – consciousness considered, in Zahavi's words, as "a *subject for the world*, […] a necessary condition of possibility for any entity to appear as an object in the way it does and with the meaning it has" (2010: 5; my emphasis). This, of course, is consciousness in the form of the transcendental subjectivity that is revealed through the phenomenological reduction.

In the phenomenological study of transcendental consciousness, one is not interested in facts about empirical consciousness, such as which neural pattern corresponds to which mental process, or how specific mental traits/illnesses are distributed in a population. Facts of this sort, together with all other scientific facts, are bracketed by the phenomenological *epoché* and are effectively irrelevant for the project of disclosing the essential structures of phenomena's presence as such. Or, more precisely, they are relevant only as instances of noesis-noema structures (i.e., presentations of phenomena) that can be illuminated phenomenologically, and not as something that can positively inform or become part of the phenomenological illumination itself. At the same time, Husserl is open to the possibility that experimental research can be of use to phenomenology. As he says in the posthumously published third book of *Ideas*, "the critical refutation of the opinion that one can obtain phenomenological results from natural-scientific experimental psychology […] in no way implies that experimental arrangements cannot acquire phenomenological function in a good sense" (1971/1980: 44). The idea is that experiments can be used to generate "intuitive material" (ibid.: 45) for

phenomenological study – i.e., through experimental means one can evoke instantiations of consciousness that can serve as *exemplars* for eidetic analysis. The phenomenological insights arrived at in this way are however still a priori and necessary in the sense we saw above – that is, they are justified by the procedure of eidetic variation, and not by presupposing the truth of experimental results considered as empirical facts.

Husserl also rejects another sense of the 'naturalizing' of consciousness, in addition to the one that is based on a confusion between empirical and transcendental consciousness. This is the idea that consciousness, considered as object, can be grasped and determined solely by empirical and experimental means – i.e., without the help of eidetic insights. If it considers its own methods as sufficient, he says, experimental psychology is "unscientific wherever it will pursue the sense of the psychical element that enters into psychophysical regularities; i.e., wherever it will penetrate to a real psychological understanding" (1910/1965: 94). That is, experiments alone cannot provide us with an understanding of the nature of psychological phenomena. On the contrary, insofar as they are experiments aimed at illuminating aspects of psychological phenomena, a delineation and provisional understanding of the phenomenon in question must be *presupposed* if they are to qualify as experiments on one psychological phenomenon rather than another in the first place. In Husserl's words, "[t]he experimental method […] presupposes what no experiment can accomplish, the analysis of consciousness itself" (ibid.: 94). This, of course, is the same idea that motivated Brentano's descriptive psychology, and Husserl salutes Brentano for his "epoch-making impulse" (ibid.: 95) in that regard. He also points to Stumpf (Brentano's student and Husserl's friend and former colleague) and Theodor Lipps as psychologists who have "recognized this defect of experimental psychology," while complaining that this dimension of their works is little appreciated among their colleagues (ibid.).

5.5 Phenomenological psychology and the paradox of subjectivity

This brings us to Husserl's idea of *phenomenological psychology* – at times also called 'pure', 'eidetic', or 'intentional' psychology (e.g., Husserl, 1931/1973: 73). While Husserl insists that the transcendental consciousness disclosed through the phenomenological reduction should not be conflated with empirical consciousness, he nonetheless thinks that the results of phenomenological analyses are relevant also for our understanding of empirical consciousness. This is because phenomenology gives insight into the *essences* of conscious processes. Hence,

he argues that phenomenological analyses of "lived-process," i.e., the subjective flow of consciousness,

> must be well-known if psychology is to have at all the capability of expressing in rigorous concepts what the stream of lived-process as a total state of the psyche continually altering itself really is and what the psychic fact within such a total state really is, whose causal-real connection it wants to bring to cognition. Whoever is a stranger to phenomenology does not have the remotest idea of the difficulties, complications, and the manifold eidetic necessities that hold sway here, even if he has done research all his life in the style of the new psychology. (1971/1980: 46)

Phenomenology, in other words, represents a way – and the most promising one at that – of establishing the conceptual foundations of psychology as an empirical science.

This role of phenomenology is, as mentioned earlier, one of this dissertation's central themes. It is explored most directly in A2, where I use phenomenological analyses of perception to criticize Degenaar and O'Regan's (2017) sensorimotor theory for relying on an inadequate concept of perception, arguing that enactivist theory makes for a better alternative. In A4 I argue that acknowledging this type of role for phenomenology, when understood within the enactivist idea of mutual illumination, involves a rethinking of the concept of nature. These radical implications are however beyond what Husserl's phenomenological psychology as presented here can deliver, but needs the framework of Merleau-Ponty's ontology of structure, presented in the next chapter, in order to be articulated properly. Within that framework, it might even be possible to see aspects of the phenomenology of life laid out in A3 as instances of an expanded phenomenological psychology, in the sense that it provides analyses of structures of mentality (purpose, sense-making) as grounded in biological existence. I develop some key moments of this reframing of phenomenological psychology in A1, where I propose an integrationist view of the relation between the empirical and transcendental. I intend the rest of this chapter to provide some more depth and clarity to that project.

On Husserl's view, phenomenology in the guise of phenomenological *psychology* is no longer a *transcendental* enterprise. The difference is that the former consists in an interpretation of consciousness that does not uphold the bracketing of the general thesis, but understands the structures uncovered phenomenologically as something that belongs to a type of existing natural phenomenon that we call the psychological or the mental. In other words, phenomenological psychology deals with "data belonging to the world, which is presupposed as existing – that is to say, data taken as psychic components of a man," whereas in

transcendental phenomenology the data "are not taken in this manner, because the whole world, when one is in the phenomenological attitude, is not accepted as actuality, but only as an actuality-phenomenon" (1931/1973: 32).

Though distinct in this way, Husserl sees transcendental phenomenology and phenomenological psychology as closely related. In *Cartesian Meditations*, for instance, he calls the latter a "*precise parallel*" to the former (ibid.; orig. emphasis). This is because, though they approach them from different angles, so to speak, the content of their descriptions tends to correspond. Indeed, according to Husserl, "every analysis or theory of transcendental phenomenology […] can be produced in the natural realm, when we give up the transcendental attitude" (ibid.: 131). Thus, the structures that characterize, say, perception understood as a mode of transcendental consciousness are in a certain sense the *same* structures that characterize perception as a psychological phenomenon, only that in the former case they are interpreted – under constant observation of the *epoché* – as universal and necessary conditions for the constitution of perceptual phenomena as such, whereas they in the latter are interpreted as traits belonging to the human *psyche*.

Further, and as indicated earlier (1.1), Husserl states that it would be "pointless to treat the positive science of *intentional psychology* and *transcendental phenomenology separately*," and says that the former "already has the transcendental hiddenly within itself," and that, when "freed of naive positivity" through phenomenology, it "becomes a discipline within universal transcendental philosophy itself" (ibid.: 147). Psychology, in other words, involves a transcendental dimension, and has the potential to become *part of* transcendental philosophy if this dimension is adequately recognized. This is because, as Merleau-Ponty would later put it, psychology "is always led toward the problem of the constitution of the world" – i.e., as long as the psychologist's descriptions "are faithful descriptions," they will eventually come into contact with consciousness' transcendental significance as that through which all meaning, validity, and presence are constituted for us (1945/2012: 60). This means that psychology, in the form of intentional or phenomenological psychology, while originally defined by a different, 'non-transcendental' task, at the same time represents a possible route into transcendental phenomenology: there is, as Husserl says, a "way into phenomenological transcendental philosophy from psychology" (1954/1970: 191).

The paradox of subjectivity

At the same time, Husserl describes the relation between psychology and transcendental phenomenology as "difficult, even paradoxical" (ibid.: 203). The main difficulty here is how

we should understand the relation between, on the one hand, the empirical subject studied by psychology within the natural attitude, and, on the other, the transcendental subject revealed to the transcendental phenomenologist by way of the reduction. For psychology, consciousness is an object in the natural world, while for transcendental phenomenology, consciousness is not *part of* the world but the condition for the possibility of worldly objects' – including psychological subjects' – appearance as such in the first place. And still, the phenomenologist engaged in transcendental reflection is obviously a living human person – an empirical subject. In other words, we seem to be faced with a situation where we have to say both that empirical subjectivity is constituted by transcendental subjectivity, and that transcendental subjectivity, in turn, is somehow realized through the cognitive life of empirical subjects. This – that we are at the same time both (transcendental) subjects *for* the world and (psychological) objects *in* the world, both constitut*ing* and constitut*ed* – is what Husserl calls "[t]he paradox of human subjectivity" (ibid.: 178).[29] How can these two forms of subjectivity be related?

We here arrive at another of this dissertation's key issues, crucial for my argument in A1. In a sense, the paradox of subjectivity takes us back to the issue of naturalization, but in a different guise than what we encountered above. For, even if one accepts Husserl's reasons for rejecting the naturalisms that think that the natural sciences can absorb philosophy and that the nature of consciousness can be grasped purely by experimental means, one is still left with the question of whether and how transcendental subjectivity can be connected to the empirical subjects that, in one sense, presuppose transcendental subjectivity for their appearance as such and, in another, are the necessary locus for all transcendental reflection and hence of the disclosing of transcendental subjectivity. Can transcendental subjectivity be 'naturalized' in the sense of anchoring its structures in natural existence, as long as one avoids the naturalisms rejected above, or does this amount to an unforgivable relapse into the natural attitude, which must remain bracketed in order to have the transcendental in view as such in the first place? In any case, there seem to be no obstacles in Husserl's philosophy for 'naturalizing' phenomenological *psychology* in the sense of grounding its findings in natural scientific approaches to consciousness by letting it serve as a conceptual foundation for such approaches. And then the question becomes, given the inseparability of transcendental phenomenology and phenomenological psychology, what – if any – implications does this form of naturalization have for the notion of transcendental subjectivity?

[29] See David Carr's book, *The Paradox of Subjectivity* (1999), for an extensive discussion.

It should be noted here that, for Husserl, the paradox of subjectivity is not a question about the relation between two different *things* in the world. Such a construal of the problem would presuppose the natural attitude and thus fail to really capture the *transcendental* subject as such – rendering it instead as another empirical subject. It is better, as Zahavi recommends, to understand them as "two different self-apprehensions," two different ways one can conceive of oneself as consciousness (Zahavi, 2017: 158). This, of course, is what is suggested by the parallelism between transcendental phenomenology and psychology described above: their analyses tend to correspond because they are analyses of the *same* subject.

This does however not solve the problem of understanding the relation between the transcendental and the empirical subject. For, even if they are only two ways of apprehending the same subject, Husserl's construal of transcendental subjectivity can at times seem to be downright incompatible with our self-apprehension as empirical subjects. For Husserl, the transcendental subject is a field of *pure possibility*, completely detached from all factual situations. One implication of this is, as he says, that "nothing human is to be found" in the transcendental subject – "neither soul nor psychic life nor real psychophysical human beings" – because "all this belongs to the 'phenomenon', to the world as constituted pole" (1954/1970: 183). In *Cartesian Meditations* Husserl also describes transcendental phenomenology as a science "whose thematic object [i.e., transcendental subjectivity] exists whether or not the world exists" (1931/1973: 30). The idea here is that the structures uncovered by transcendental phenomenology are independent of the factual existence of the world – they belong to a field of pure and essential meaning. How can these characterizations of transcendental subjectivity apply to something that – if our empirical self-apprehension is to retain any validity – is also a natural phenomenon in the world?

The answer might be that these descriptions of transcendental subjectivity must be taken as methodological cues rather than ontological statements – i.e., that they are telling us how to get the transcendental field into view (by bracketing both our own and the rest of the world's factual existence), rather than ascribing properties to an existent thing. Still, however, it is difficult to see how the self-apprehension arrived at in this way can be connected to the empirical existence of the philosopher that is doing the self-reflecting. It can seem that Husserl, in his strive to make sense of the possibility of a world *for* a subject, develops a notion of subjectivity that it is at best unclear how can be a possibility *of* the world. One can also ask if not Husserl here overestimates the purity of his transcendental-phenomenological enterprise. Is it even *possible* to arrive at a self-apprehension that bears no connection to our factual,

human situation, or might this – as we'll see Merleau-Ponty argue (6.6) – be an inadequate conception of the phenomenological field?

There are at least three different ways to deal with the 'paradox of subjectivity'. One is to insist on the primacy of empirical subjectivity over transcendental subjectivity and thus effectively reduce phenomenology to psychology. Another is to maintain the primacy of transcendental subjectivity and its complete separateness from empirical subjectivity, making the latter simply an achievement of the former, with no dependency relation moving in the opposite direction. Where both of these alternatives deny that there is a real paradox here by making one of its terms absorb the other, the third alternative is to see the paradox as an indication of a fundamentally *ambiguous* nature of subjectivity that resists analysis into purely subjective and objective aspects.

This third alternative is at the core of the view of enactive phenomenology that I develop in this dissertation. In A2 it appears in the form of the view of perceptual sense as an integration of lived, living, and behavioral dimensions that I advocate *pace* Degenaar and O'Regan's (2017) sensorimotor theory, and in A4 I posit it as central to the methodological and ontological framework for the enactive-phenomenological rethinking of nature. In A1, which is my most explicit and thorough handling of the relation between the empirical and the transcendental, I present it as a key part of the 'integrationist view.' I there ascribe that view to Merleau-Ponty and contrast it with the ('modest') transcendentalism I find in Husserl.[30] Here I'll try a different strategy and rather emphasize how key parts of Merleau-Ponty's view are prepared already in Husserl's phenomenology.[31] To see this, we need to have a closer look at the concept of subjectivity that emerges from the latter.

5.6 Husserl's concept of subjectivity

So far we have focused mainly on the method of Husserl's phenomenology and its status relative to naturalism and psychology. The concept of subjectivity that emerges from Husserl's project has however remained largely unexplored – all we have learned about that topic so far is that Husserl subscribes to a (perhaps significantly) modified version of Brentano's notion of intentionality as a defining feature of consciousness, and that he posits the horizon-structure as an essential part of perception. In light of Husserl's above-mentioned comparison of the

[30] Though I make it clear that other interpretations of Husserl are possible.
[31] The idea that there is a great degree of continuity between the two is supported by Merleau-Ponty's own reading of Husserl (e.g., 1960/1964b: 172 ff.). See also Zahavi (2002).

phenomenological reduction to Descartes' methodological doubt, one might suspect that he ends up subscribing to a view of subjectivity similar to that of Descartes' *res cogitans* – i.e., a self-sufficient, bodyless, and solipsistic *thinking Ego*. That, however, is far from the case. Subjectivity, as Husserl sees it, is on the contrary a necessarily *embodied* and *intersubjective* being shaped by a history of interactions with the world at which it is directed. By unpacking some of the aspects of this idea, we'll be able to see how the separation of the transcendental and the empirical, the subjective and the objective, seems to be challenged already in Husserl's phenomenology.

Temporality and genetic phenomenology

The most foundational concept for Husserl's understanding of subjectivity, in addition to that of intentionality, is what he calls *the consciousness of internal time* (1931/1973: 43; 1991). 'Internal time' here refers to the temporal relations between moments of consciousness as such, in contrast to the objective time that pertains to relations between events in the objective (experienced) world. Speaking of a *consciousness* of internal time thus means that subjectivity is defined by a sort of grasp of the relations between the moments of its own temporal flow. This is evident, for instance, in our ability to experience something as one, unified object across a stream of ever-changing experiences of *aspects* of the object. In perceiving, say, a table, one can move around it, making various aspects of it, not one identical to another, flow through the visual field while constantly perceiving the table as *the same object*.

The consciousness of internal time, then, is a foundational structure for the possibility of experiencing patterns and unities in the ever-flowing stream of consciousness. And, since we can only ever be conscious of objects as unities *within* this stream, the consciousness of internal time is a necessary condition for the constitution of objects for consciousness as such. This temporal constitution of the unities of objects is, moreover, and crucially, only possible because the consciousness of internal time simultaneously underlies *the unity of consciousness itself*. That is, one would not be able to perceive an object as the same object through time unless one – the subject to which the temporal flow of object-aspects is given – also maintained a form of unity as *the same subject* through time. In Husserl's words, the consciousness of internal time thus marks "a unity of synthesis," "*a connectedness that makes the unity of one consciousness*, in which the unity of an intentional objectivity […] becomes '*constituted*'" (1931/1973: 41-42; orig. emphasis).

As analyzed by Husserl, the consciousness of internal time is characterized by a complex, threefold structure where every present moment of consciousness – every 'now' or

"primal impression" (1991: 30) – simultaneously involves and is modified by dimensions that *stretch into* or *co-intend* immediately past and future moments of consciousness. Husserl calls consciousness' co-intending of the immediate past *retention* (ibid.: 31) and its co-intending of the immediate future *protention* (ibid.: 54). In retention, previous primal impressions are *retained* in consciousness' present as something just-passed, and in protention, consciousness' present is 'animated' by still undetermined, yet-to-be-fulfilled *anticipations* of future primal impressions.

The unity of consciousness and its objects is constituted by the intricate ways that these three 'dimensions' – retention, primal impression, protention – dynamically interweave and inform each other through the flow of internal time. Husserl's more detailed analyses of this complex temporal logic are not relevant for our purposes.[32] One thing that is important to note, however, is that we here get a view of consciousness as something that cannot be analyzed in terms of a linear flux of discrete and self-sufficient 'now-points'. For Husserl, rather, consciousness is essentially a temporally extended, 'circular' process, where every moment of consciousness is what it is due to its reaching beyond the immediate present, being inseparably tied to and informed by the just-passed and the yet-to-come. The aforementioned horizon-structure of perception is one expression of this. As the manifestation of possible *future* perceptions in what is *now* directly perceived, the horizon-structure displays the future-oriented, anticipatory structure of protention (Husserl, 1931/1973: 44). Thus, in the table-perception, the perceived unity of the table – its being present to the perceiver as a complete spatial object – is constituted by a process whereby every aspectual appearance of the table in the flow of primal impressions involves an indication of what's coming next. Retention is of course also essential here. Keeping just-passed table-aspects in play in the present, it marks each present table-presentation as a presentation of *the same* as the past ones and informs protention by indicating that more of the same is to come.

Husserl's phenomenology of the consciousness of internal time is important for our purposes for two reasons. First, because it illuminates a foundational feature of the phenomenological concept of consciousness that – with some Merleau-Pontian modifications – is embraced by contemporary enactive phenomenology. Secondly, because it plays an indispensable role in enactivism's *neurophenomenological* naturalization of consciousness, which is at the core of the enactive integration of phenomenology with biology and dynamical

[32] But see Husserl (1991) for a compilation of his most thoroughgoing investigations of the consciousness of internal time.

systems theory. Thus, in a founding text for the neurophenomenological program, Francisco Varela – co-founder of the enactive approach – embarks on naturalizing the experience of 'nowness' by linking phenomenological analyses of the consciousness of internal time to neurobiological accounts and dynamical systems formalism, engaging them in a mixed discourse "as if they were partner [sic] in a dance" (1999: 267).[33] Recognizing the foundational significance of the consciousness of internal time for the phenomenological view of consciousness, Varela makes it clear that he considers this study "an acid test of the entire neurophenomenological enterprise" (ibid.). After all, if the neurophenomenological naturalization of the consciousness of internal time were to generate no valuable results, then there would be little hope for neurophenomenological approaches to other structures of consciousness, insofar as phenomenology sees the consciousness of internal time as essential to them all. I return to the topic of neurophenomenology in chapter 7.

A term connected to the topic of temporality that is often mentioned when one is trying to, so to speak, drag Husserl's transcendental phenomenology down to earth, is *genetic phenomenology*.[34] Genetic phenomenology springs from the recognition that the structures of consciousness, our ways of perceiving and apprehending phenomena, are not simply given to us in ready-made form, but have a developmental history – a *genesis*. Thus, for instance, Husserl remarks that the consciousness characteristic of scientific theorizing is not something that, through eidetic variation, can be "shifted arbitrarily within the unity of my life" (1931/1973: 74). On the contrary, this form of consciousness will only be a real possibility *after* a set of other developmental stages, such as learning to speak and read, have been traversed. The picture that emerges from this insight is that of structures of consciousness as a type of *habits* that have been acquired and incorporated through a history of experiences and interactions, building upon past habitual structures and laying the ground for future ones. The Ego, as Husserl says, is a "substrate of habitualities" (ibid.: 69). Genetic phenomenology is the project of tracing the genesis of structures of consciousness, identifying the kinds of experiences, developments, and developmental principles that have led to their present form, and which are, in certain ways, still *retained* their present form.[35] If the structures of

[33] Varela (1996) had laid out the principles of the neurophenomenological program earlier, but the chapter on temporality marks the first systematic application of the program.
[34] Merleau-Ponty draws attention to the significance of Husserl's idea of genetic phenomenology in the very first page of his *Phenomenology of Perception* (1945/2012: lxx) and also discusses it in later works (e.g., 1964a: 66). See Roy et al. (1999: 37) and especially Depraz (1999b) for a discussion of genetic phenomenology in the context of the project of naturalizing phenomenology.
[35] One could say that genetic phenomenology studies the past *causes* of present structures of consciousness, though the causality in question here is not the natural sciences' mechanical causality,

transcendental consciousness must be understood as temporal in this way, so that their form at any given moment is the expression of habitualities developed through a concrete – and *personal* – history of experiences and interactions, then it seems to become even more difficult to define them in isolation from the empirical subject.

Genetic phenomenology opens a vast new field for the phenomenologist. It also establishes a closer connection between transcendental phenomenology and empirical sciences. Developmental psychology, which can feed the project of genetic phenomenology with facts about how and when various psychological features develop, is probably the most evidently relevant here. An interesting question, however, is how far the scope of genetic phenomenology can be extended. Can it, for instance, incorporate 'natural' matters such as biology? The body is, after all – as we'll see shortly – essential in shaping how we experience the world, and its physiological constitution is the result of ontogenetic and phylogenetic developments. Thus, insofar as one can trace experiential structures to such developments, it seems that they must have a place within genetic phenomenology. In the next chapter, we'll see that Merleau-Ponty seems to think along these lines when defining human consciousness as a structure of behavior that carries with it moments of its physical and biological past in its conscious present.

Embodiment

Even though Husserl's phenomenology of the temporality of consciousness plays a key part in the enactive literature, no part of phenomenology has had more influence on the enactive approach, and on embodied/4E approaches in general, than the phenomenology of *embodiment*. Although it is the works of Merleau-Ponty that are the main source of influence in those cases, Merleau-Ponty himself was fully aware that he was proceeding from insights already articulated by Husserl.

The main idea of the phenomenology of embodiment is that structures related to our being *bodies* are essential to consciousness. The central focus is the significance of the body for perceptual consciousness. "The Body," Husserl says, is "the *medium of all perception*; it is the *organ of perception* and is *necessarily* involved in all perception" (1952/1989: 61; orig. emphasis). First of all, the body obviously is our "zero point of orientation," in the sense that all we perceive is perceived as oriented relative to our bodily position (ibid.). Secondly, Husserl

but what Husserl calls *motivation* (ibid.: 75). See Walsh (2013) for an account of Husserl's concept of motivation as it figures from *Logical Investigations* and onwards, and Pugliese (2018) for a discussion focused on its significance for genetic phenomenology. Wrathall (2005) writes on the concept of motivation as it figures in Merleau-Ponty's phenomenology.

sees "*kinesthetic sensations*" – i.e., sensations of the movements and positions[36] of one's own body – as a necessary function for the constitution of perceptual experience (ibid.: 63; orig. emphasis). "Perception," he says, "is without exception a *unitary accomplishment* which arises essentially out of the playing together of two *correlatively related functions*" – on the one hand, sensations corresponding to features of the thing (e.g., its color, shape, etc.) and, on the other, kinesthetic sensations (ibid.). For instance, in tracing the surface of a table with my hand, sensations of the table's texture and extension flow through my fingers and, at the same time, I sense *how* my fingers move as they explore the surface - and it is through the unified correlation of these forms of sensation that the table appears to me, through my explorations, as one spatial object with such-and-such features (texture, extension). Third, Husserl understands the horizon-structure of perception as something defined by possibilities for bodily movements – i.e., the possibilities for future perceptual presentations that characterize perceived objects are first and foremost possibilities for varying one's bodily attitude and behavior relative to them (1931/1973: 45). Thus, Husserl says, objects are primarily presented to us in the form of an *I can* – as a system of possible activities for an embodied subject (ibid.). With these ideas, we can see clear links to Heidegger's idea of objects' primary manifestation as 'ready-to-hand', Merleau-Ponty's concepts of motor intentionality and the body schema, as well as J.J. Gibson's notion of affordances – all of which are central to the enactive view of the embodied mind (Gallagher, 2017a: 5).[37]

By thus recognizing the essentially embodied nature of subjectivity, Husserl at the same time introduces a fundamental ambiguity into his notion of consciousness. The body, after all, not only partakes in constituting *how* the world appears to us in perception – it is also a possible *object* of perception, a material existence present as such for our sense organs. This complex status of the body is perhaps most vividly demonstrated in the experience of touching one's own body. Husserl's main example here, which Merleau-Ponty later made a key theme for his phenomenology of embodiment, is the experience of touching one's left hand with the right (1952/1989: 152).[38] Here, the left hand appears as a tactile object for the right hand, and at the same time, this experience of *touching* an object with the right hand is accompanied by the experience in the left hand of being *touched*. In this case, then, we not only have, as Merleau-Ponty says, "the unidirectional relationship of the one who perceives to what he perceives"

[36] Husserl's notion of kinesthesis here thus includes what current literature tends to distinguish as *proprioception*, the sense of bodily posture and position.
[37] See Zahavi (1994) for a more thorough study of Husserl's phenomenology of embodiment.
[38] See e.g., Merleau-Ponty (1960/1964b: 166).

(1964b: 166) – rather, the perceived in turn perceives its perceiver, sensing itself being affected by something else. Husserl talks of this as a *doubling* of sensations, "since each [hand] is then precisely for the other an external thing that is touching and acting upon it, and each is at the same time Body" (1952/1989: 152). When written with a capital B, like here and in the first quote of the previous paragraph, 'Body' translates the German *Leib*, which normally refers to the living bodies of humans and animals and for Husserl particularly designates the body as a *subject* in the sense we have already seen (more on the notion of *Leib* soon). Hence, the doubling of sensations in question is one of sensing oneself, in each hand, as a subject and an object at the same time.

Now, the subject-object nature of the body might be most clearly displayed in experiences such as touching one hand with the other, but it is also revealed in our perception of things other than our own body. For instance, the very fact that our body is our zero point of perceptual orientation reveals that the perceiving subject itself is *part of* the world that it perceives, occupying a position *among* and relative to perceived things. Moreover, the sense of being *touched* and thus being 'confirmed' as a material existence through contact with something external is an essential feature of all our contact with the perceived world. In feeling the table surface's texture with my fingers, for instance, I simultaneously feel my fingers being affected in certain ways corresponding to the perceived features of the table. Through contact with the perceived world, then, perceiving subjects are revealed to themselves – in virtue of their kinesthetic sensations – as bodily beings that are, as Husserl says, "integrated into the causal nexus of material nature" (1952/1989: 167).

We here get a view of subjectivity that it is difficult to conceptualize as a *pure* subjectivity, i.e., as a mere opening toward possible objects for consciousness. On the contrary, we have seen that the very possibility of being presented with perceptual objects requires a material form of existence that is present to itself as such – making the embodied nature of consciousness a *transcendental* trait and not something that can be understood merely as belonging to consciousness considered *empirically*, as an object. An important question here, at least for our purposes, is what, if any, consequences this acknowledgment has for the paradox of subjectivity. Does it signal a notion of the transcendental that is not so far removed from the empirical after all? Merleau-Ponty, as we'll see in the next chapter, surely seems to think along those lines, and he also interprets Husserl as moving in the same direction (Merleau-Ponty (1960/1964b, ch. 6). Another feature of Husserl's phenomenology that points toward an anchoring of transcendental subjectivity 'within' rather than 'outside of' the experienced world is the significance he ascribes to intersubjectivity, which we will have a look at shortly.

Leib, Körper, and the personalistic attitude

We can start approaching that topic by first taking note of some terminological features of Husserl's phenomenology of embodiment. In the original German, Husserl uses two different words to designate distinct ways of apprehending our bodies: *Leib*, which we encountered above, and *Körper*. In German, the former is exclusively used to denote the bodies of living beings, whereas the latter can apply to any kind of physical thing (e.g., celestial *bodies*). There is no straightforward way of translating these different words for 'body' to English that preserves the different meanings exploited by Husserl. In the translation of *Ideas II*, *Leib* is rendered as 'Body' and *Körper* as 'body'.[39] The translator of *Crisis*, however, opts for 'living body' and 'physical body', respectively (1954/1970 p. 50n15). And, to confuse matters even more, enactivists – who use these two senses of embodiment as a framework for their method of "circulation" between phenomenological and scientific approaches to the mind (Varela et al., 1991: xv-xvi) – tend to refer to the former as the 'lived' body and the *latter* as the 'living' body (e.g., Thompson, 2007: 231).[40]

A common way to explain the meaning of the two terms as Husserl uses them, is to say that '*Leib*' refers to the body considered as an experiencing subject, whereas '*Körper'* refers to the body as an experienced object (e.g., Zahavi, 1994: 69). Thus, when I touch my left hand with the right, the kinesthetic sensations of the right constitute a *Leib* for which the left hand appears as *Körper*, while the left hand, in turn, appears as *Leib* to itself through its sense of being touched (Slatman, 2019: 204-205). From this perspective, one way to express our conclusion above is to say that *Leib* always involves the experience of being affirmed as *Körper* (Slatman and Widdershoven, 2010: 78).

The picture of *Leib* as body-subject and *Körper* as body-object is however complicated by the fact that Husserl uses *Leib* also to characterize how we experience the bodies of other human beings (1954/1970: 107; 1952/1989: 172). Thus, '*Leib'* does not merely denote the experience one has of *oneself* as a bodily subject of experience, but also refers to a way that other humans and animals can appear to us as objects of our experience. More precisely, it refers to their appearing not as *mere* physical objects – i.e., as mere *Körper* – but as subjects in their own right, as bodies entertaining their own perspectives on the world.[41] To be sure, others

[39] See the translators' comment on this in their introduction (Rojcewicz and Schuwer, 1989: xiv).
[40] Natalie Depraz (2001; cited by Thompson, 2007: 236, 462n6) gives an overview of several other ways Husserl distinguishes for apprehending the body phenomenologically. See also Heinämaa (2018).
[41] This is in line with Heinämaa's interpretation, which sees the *Leib-Körper* distinction as different from the distinction between the body-subject and the body-object, conceiving *Leib* rather as the body

appear to us as physical objects, objects that we can move relative to and perceive from different perspectives like other perceived things, and in that sense they appear as *Körper* – but the physicality of others normally manifests for us as animated by a subjective form of existence, standing in similar relations to their surroundings as we do, displaying themselves as *Leib*. The same, of course, holds when we touch one of our hands with the other: the hands are not presented as *mere Körper* to each other, but as manifestations of a corporeal subjectivity – *Leib*.

Husserl calls the attitude by which we normally apprehend living human and animal bodies the *personalistic* attitude, and distinguishes it from the *naturalistic* attitude (1952/1989: 147 ff.). In the former, bodies are perceived, in Heinämaa's words, as "expressive unit[ies] of spirit and sensible matter" (2018: 536-537) – i.e., as unities where the psychological or spiritual is not apprehended as a feature *in addition to* the body's physical presence, but rather as a *sense* that is articulated through and organizes the sensible body (Husserl, 1952/1989: 253). In the naturalistic attitude, on the other hand, the psychological is conceived as a feature of the physical body that is related to 'mere' physiological processes in certain ways (ibid.: 149).[42] This is the attitude of the scientist studying how psychological phenomena emerge from and relate to material processes. According to Husserl, the naturalistic attitude is a legitimate way of approaching living bodies as long as one does not believe that the whole truth about subjectivity can be gained in that way, i.e., by reducing the mental to the 'merely' physical. Indeed, as Husserl sees it, "the naturalistic attitude is in fact subordinated to the personalistic" (ibid.: 193), in the sense that it *abstracts from* and hence *presupposes* the personalistic attitude. This is because both the subject assuming the naturalistic attitude (the scientist) and its object (another living human or animal body) are primarily individuated as unified embodied subjects disclosed in the personalistic attitude. In other words, it is by being thus individuated that the scientist is able to approach her object as an object *for* her consciousness, and her object is in turn individuated and defined as what it is (a living body) by its display of a subjective mode of existence (Heinämaa, 2018: 539).

apprehended as "invested with psychic powers" and *Körper* as the body apprehended as "mere material thing […], dominated by efficient causality" (2018: 525).

[42] It is important to here not confuse the *naturalistic* attitude with the *natural* attitude the bracketing of which defines the stance of transcendental-phenomenological reflection. Both the naturalistic and the personalistic attitudes operate within the natural attitude in the sense that they take the existence of their objects for granted and do not question the possibilities of their appearance as such (cf. Zahavi, 2021: 267). For more on the personalistic attitude, see Heinämaa (2017).

While rarely expressed in these terms, the primacy of the personalistic over the naturalistic attitude is a core principle in both Merleau-Ponty's and the enactive approach to understanding the relations between consciousness and nature. That is, if we want to make sense of this relationship, we should not forget that the primary phenomenon – that upon which the naturalistic attitude is based – is the expressive unity of bodily subjects. Merleau-Ponty, as we'll see, makes this point by construing consciousness as a holistic and embodied *structure of behavior* (1942/1963), characterized by an expressive sense that defines the functions of its bodily components, and enactivists develop this idea further with their emergentist theory of living beings as autonomous agents (Thompson, 2007; Di Paolo et al, 2017).

Intersubjectivity and the lifeworld

With the above reflections on the personalistic attitude and the experience of others as embodied subjects (*Leiber*) in their own right, we have begun to approach Husserl's phenomenology of intersubjectivity. A key topic here concerns the significance of intersubjectivity for the transcendental theory of subjectivity. As Husserl himself acknowledges, the method of transcendental reduction can give the impression of leading to a concept of transcendental subjectivity as a *solipsistic subject* – a single, all-encompassing consciousness for which nothing else can be a subject (1931/1973: 89). After all, from the perspective of the transcendental attitude, other subjects are turned into constitutive achievements *of* the transcendental subject and thus become, it seems, mere phenomena *for* transcendental subjectivity and not really subjects in their own right. The potential issue becomes even more pertinent when we remember that Husserl saw Descartes' methodological doubt as a model for transcendental phenomenology. After all, the end result of the Cartesian doubt is a lone, thinking Ego that knows only that it itself exists and can have no certainty regarding whether the human bodies that appear to it are imbued with egos of their own. Is this also the fate of Husserl's phenomenology?

The first thing to note in order to ease this worry is that the transcendental-phenomenological method, in contrast to that of Descartes, is not aimed at assessing what we can really know about the world, but at disclosing the necessary and constitutive structures for the appearance of objects (e.g., as known) for consciousness. Thus, the question here is not *whether* we can know for sure that other subjects exist, but rather *how* other subjects – which evidently are part of the experienced world – are constituted as such for consciousness. Husserl deals with this question through extensive analyses of the intentional structure of *empathy*, where a key idea is that our own bodily sense of being both sensing and sensible beings – as

illustrated with the case of hand-touching above – grounds our possibility of perceiving others as bodily subjects like ourselves (1931/1973: 112 ff.). Still, however, one might worry that the transcendental subjectivity revealed through the transcendental-phenomenological reduction is incapable of acknowledging other subjects genuinely *as* other subjects – i.e., not only as *constituted* intentional correlates but as *constituting* consciousnesses in their own right.

This potential challenge is dealt with by Husserl through the recognition, placed center stage in his later writings, that the constitution of the objective world cannot be achieved by a lone and self-sufficient transcendental subject, but rather requires a transcendental *plurality* of subjects – a transcendental *intersubjectivity*.[43] The experienced world, Husserl says, displays the sense of "thereness-for-everyone" (ibid.: 92) – i.e., it appears not as "my *private* synthetic formation" but rather as "other than mine alone, as an intersubjective world, actually there for everyone, accessible in respect of its Objects to everyone" (ibid.: 91; orig. emphasis). When, for instance, I perceive a table, the table's appearance to me as such – even when considered as mere correlate of my intentional act of perception within the transcendental-phenomenological attitude – essentially involves its being presented as accessible to the perspectives of *other* subjects. This entails an enrichment of the idea of perceived objects' horizon-structure – i.e., the table's horizon is not only an indication of possible future presentations of the table for *me* but indicates possible perspectives in principle realizable by others. The table's sense of 'thereness-for-everyone' thus involves the possibility of having my perceptual grasp of the table validated by others, and it is this presumption – that another subject will be able to confirm that what I'm perceiving belongs to a world that we share – that underlies the table's manifestation for me as a real, transcendent object. According to Husserl, this ability to experience a world presented as 'there for everyone' cannot originate in an isolated subject but presupposes actual encounters with other embodied subjects experienced as experientially directed towards the same world as me (Zahavi, 1996: 230-232). In this way, the transcendental constitution of phenomena for consciousness must be recognized as a *collective* rather than an individual achievement.

Husserl's reflections on the significance of intersubjectivity eventually led him to reconsider his earlier Cartesian approach to the transcendental-phenomenological reduction. As he puts it in *Crisis*, "the 'Cartesian way' […] has a great shortcoming: while it leads to the transcendental ego in one leap, as it were, it brings this ego into view as apparently empty of

[43] See Zahavi (1996) for a detailed exposition of Husserl's analyses of intersubjectivity and their significance for his understanding of transcendental phenomenology.

content, since there can be no preparatory explication" (1954/1970 p. 155). In other words, while the method of starting from one's own individual consciousness and executing the bracketing of the natural attitude from there – through a form of 'doubt' of reality independent of this consciousness – is an efficient way of arriving at the reflective position of transcendental phenomenology, it comes with the cost of apparently detaching its field of study from the structures of meaning it is aimed at elucidating. Instead of proceeding in this way, which seemingly tends towards establishing one all-embracing consciousness as the ground for all phenomena, we should, Husserl says, make the intersubjectively shared *lifeworld* the starting point of our investigations (ibid.: 154, 172). This does not entail giving up on the procedure of bracketing the natural attitude, but the bracketing is no longer understood as disclosing a field of phenomena correlated exclusively to the consciousness of the reflecting phenomenologist. Rather than such a privileging of the position of the phenomenologizing subject, the transcendental-phenomenological reduction is now, in the first instance, seen as opening us unto the world *qua* perceived and inhabited by a multiplicity of subjects of co-constituted phenomena.

Thus conceived, the lifeworld is not simply a phenomenon *for* consciousness, but the ultimate and primordial *ground* for all conscious activity – that from and within which every phenomenon for consciousness gets its sense. Indeed, even consciousness itself gets its sense from the lifeworld. As Husserl says, "subjectivity is what it is – an ego functioning constitutively – only within intersubjectivity" (ibid.: 172). In other words, it is only in virtue of being embedded in the intersubjective lifeworld that consciousness is able to disclose phenomena in the ways that it does. Moreover, from the perspective of the lifeworld, my consciousness is not simply a subjective correlate of phenomena but also appears as an embodied subject experienceable by others – i.e., as a phenomenon in its own right. Indeed, it is only thanks to my encounters with others, experienced as directed towards the same lifeworld as me and towards *me* as an embodied subject in this lifeworld, that I become able to conceptualize myself as a subject in the first place (Zahavi, 1996: 233).

With this brief dive into Husserl's phenomenology of intersubjectivity, we have seen that there is little reason to accuse his notion of the transcendental subject – at least as it figures in his later writings – of entailing a form of solipsism. On the contrary, the transcendental subject is what it is only on the basis of a lifeworld involving a multiplicity of subjects, as part of a transcendental intersubjectivity. Without this intersubjective existence, it would not even be possible for the phenomenologist to engage in transcendental reflection, since it is through and on the basis of this existence that the concepts required for such a procedure – subjectivity,

experience, objectivity etc. – are enabled in the first place. And, insofar as the phenomenologist's analyses must be formulated in a language, they are – by this very fact – necessarily already directed at *potential others* in a community of linguistic subjects beyond the phenomenologizing individual.

We have also seen how these reflections on the significance of intersubjectivity enrich aspects of our analysis of embodiment above. While we there saw that the body plays an essential role for perceptual consciousness, and that the experience of being a bodily subject necessarily involves a sense of being a material, *sensible* part of the world, we can now expand this idea to say a fundamental part of being a bodily subject is the sense of inhabiting an intersubjective lifeworld and as such of being *experienceable by others*. Moreover, insofar as the very concept of subjectivity here is seen as enabled by encounters where I experience others as bodily subjects and they experience me in the same way, we seem to be faced with an obstacle to articulating a notion of a *pure* subjectivity – i.e., a subjectivity that is *only* a subject and not also a phenomenon ('object') in the experienceable lifeworld.

Before rounding off this chapter, let's return more explicitly to the paradox of subjectivity and see where we stand after this section's considerations of Husserl's concept of subjectivity. In the previous section I distinguished three general ways of dealing with the paradox: reducing the transcendental subject to the empirical subject, construing the empirical subject as a mere correlate of transcendental subjectivity, or seeing the paradox as indicative of an inherently ambiguous nature of subjectivity. Over the last few pages, I've tried to show how Husserl's notion of subjectivity seems to lend itself to the latter alternative. Thus, we have seen that, even in transcendental self-apprehension, we cannot escape the fact that the subjectivity thus disclosed, in addition to being a constitutive condition for the appearance of phenomena, is also revealed as an experienceable, embodied being inhabiting a lifeworld open to multiple perspectives. In other words, we are both subjects for the world and objects of the world at the same time: Our subjectivity cannot be completely purified of our existence as 'objects', just as our nature as *Körper* – as we appear as worldly, sensible beings for both ourselves and others – intrinsically involves displaying ourselves as *Leib*, i.e., bodies animated by and expressive of subjectivity.[44]

[44] The extent to which Husserl actually embraces this thesis, and the significance it has for his conception of transcendental phenomenology and its relation to naturalism, are questions that go beyond the scope of my investigations. For our purposes, it suffices to show, as I hope to have done, that there are tendencies in Husserl's phenomenology that point in this direction.

As indicated above, the line of thinking involved in this 'ambiguous' view of subjectivity is crucial for the approach I've pursued in the articles, and I hope that the last sections' elaborations can contribute to shed more light on the foundational ideas that are operative there. In particular, I take the points about embodiment and intersubjectivity to represent a significant supplement to A1's critique of Gardner's (2015) transcendentalism and its case for an integrationist view of the relation between the transcendental and the empirical.

5.7 Summary

The main purpose of this chapter has been to give a sense of what phenomenology, as conceived by Husserl, is, with special focus on its methodology, its relation to naturalism and psychology, and its concept of subjectivity. We have seen that phenomenology from the start was defined in opposition to psychologism, aiming to preserve phenomena's meaning and validity by elucidating their internal manifestation, rather than reducing them to external factors. We have also made acquaintance with the methodological concepts of intentional analysis, eidetic variation, and the phenomenological reduction, and seen how the latter is especially important for the project of transcendental phenomenology. Looking closer at Husserl's critique of naturalism, we saw that its main targets are, first, the idea that natural science can absorb philosophy and, secondly, the idea that experimental means are sufficient for accounting for consciousness. While there thus is no obstacle in Husserl's phenomenology for a 'naturalized phenomenology' in the sense of a phenomenologically informed (and non-reductive) view of the mind anchored in nature with the help of other scientific perspectives, there remains the issue of understanding the paradox of subjectivity – how can we be both transcendental and empirical subjects? In the last section above I've outlined some elements of Husserl's notion of subjectivity – temporality, embodiment, and intersubjectivity – that can be seen as indicating a blurring of the distinction between the transcendental and the empirical subject. As we'll now go on to see, these tendencies are picked up and further developed by Merleau-Ponty in a project that many – perhaps wrongly – interpret as involving a break from Husserlian philosophy.[45]

[45] See Zahavi (2002) for an outline of anti-Husserlian interpretations of Merleau-Ponty and a convincing defense of the idea that there is actually more of a continuity between the two thinkers than many seem to be aware of.

6
Merleau-Ponty's ontology of structure
A phenomenology of embodied existence

Merleau-Ponty is, as mentioned earlier, the main phenomenological source of inspiration for the enactive approach. If our exploration of Husserl in the previous chapter gave us some preliminary answers to the questions concerning the nature of phenomenology, its relations to naturalism and psychology, and its concept of subjectivity, then the purpose of this chapter is to refine these answers through a Merleau-Pontian lens, so as to bring us closer to the foundations of enactive phenomenology.

I've chosen to approach this task by focusing on some key parts of Merleau-Ponty's early works, *The Structure of Behavior* (1942/1963) and *Phenomenology of Perception* (1945/2012), as well as some shorter texts of his, with special attention given to the former. There are certainly also elements from his later philosophy that it could have been relevant to present here.[46] When I've chosen to narrow my focus in this way, it is, first, because these are the works by Merleau-Ponty that traditionally have been the most central to the enactive approach, and, secondly, because they are the most illuminating when it comes to understanding the significance and nature of phenomenology as it figures in Merleau-Ponty's philosophy. One reason for why I focus especially on *The Structure of Behavior* here is that I've already covered many of the relevant topics from *Phenomenology of Perception* either in the articles or in the exposition of Husserl's phenomenology of embodiment and intersubjectivity above. Another reason is that, even though there are almost no explicit mentions of phenomenology in *The Structure of Behavior*, this first major work of Merleau-Ponty establishes a framework that, on my reading, is crucial for understanding the direction Merleau-Ponty's phenomenology takes in *Phenomenology of Perception* (and his later works, for that matter).

[46] For instance, a look at his *Nature* (1995/2003) lectures would have provided us with more examples of Merleau-Ponty's engagements with biology and physics and would also have shed more light on his thoughts about non-human animals. This could undoubtedly have been valuable for a deeper discussion of the phenomenological philosophy of nature advocated by enactivism. Moreover, seeing how Merleau-Ponty attempted to move even further beyond the subject-object dichotomy with the concept of *flesh* proposed in his posthumously published unfinished manuscript, *The Visible and the Invisible* (1964/1968), would have been beneficial for getting an even better grasp of the ontological dimension in his works.

This framework is what we can call an *ontology of structure* or, with Ted Toadvine (2009: 21), a *Gestalt ontology*. The key idea here is that human consciousness, as well as non-human animals, should be understood as holistic, self-organizing *structures of behavior* characterized by forms of intrinsic meaning or sense pertaining to their modes of existence. In line with Toadvine, Morris (2018), and others, I see the ontology of structure developed in *The Structure of Behavior* as the first building block in a career-long project on Merleau-Ponty's part of articulating a philosophy of nature that recognizes *sense* as intrinsic to the natural world.[47] If we want to understand the significance of phenomenology for Merleau-Ponty, then, it must be seen in light of this broader project.

An interesting question here is that of the relation between the phenomenological projects of Merleau-Ponty and Husserl. As mentioned at the start of the previous chapter, I've focused my reading of Husserl on elements where a continuity with the later stages in the enactive-phenomenological movement can be discerned. This continuity is especially clear in the ideas about embodiment and the lifeworld, which, as we saw, seems to point in the direction of a blurring of the transcendental-empirical and subject-object distinctions. Merleau-Ponty makes this ambiguous nature of subjectivity the heart of his philosophy, and he approaches it in a somewhat different way than Husserl. First, Merleau-Ponty develops his philosophy through deep engagements with the empirical mind and life sciences of his day, exemplifying the idea of 'mutual illumination' to an extent not found in the works of Husserl. Secondly, where Husserl's phenomenology arguably is primarily driven by epistemological concerns, Merleau-Ponty's works focus more on the ontological potential of phenomenology, seeking to clarify the being of consciousness and its connection to nature. Whether these differences signal *incompatibilities* between Husserl's and Merleau-Ponty's phenomenologies or simply represent differences in focus is not so easy to establish. This is not a question I'll pursue at length, but toward the end of this chapter we'll consider a couple of ways in which Merleau-Ponty seems to go further than what Husserl allows for in his phenomenology.

The first five sections of this chapter are dedicated to elements from *The Structure of Behavior*. First, I set the general frame of the book's project, outlining its main purpose and the two alternative positions it seeks to overcome, and make a connection to ideas from the Husserl chapter (6.1). I then give a brief presentation of Merleau-Ponty's main scientific sources in the book, in particular the Gestalt psychologists, and their connections to the

[47] Barbaras' (2005) rendering of Merleau-Ponty's philosophy as a *phenomenology of life* might also be counted as subscribing to the same – or at least a very similar – interpretation.

phenomenological movement (6.2). Then follows a closer look at some key aspects of Merleau-Ponty's notion of structure of behavior (6.3), before turning to how he develops his view of the ontological status of structures through a critique of naturalist tendencies in Gestalt psychology (6.4). In the fifth section, I show how Merleau-Ponty towards the end of *The Structure of Behavior* can be read as moving towards a *transcendental philosophy of nature* (6.5). This then sets the stage for Merleau-Ponty's more explicit phenomenological project in *Phenomenology of Perception*, some key elements of which I present in the next four sections: first by outlining the idea of *existential* phenomenology (6.6), then by looking into Merleau-Ponty's view of the relation between phenomenological essences and facticity (6.7) before considering his conception of the relation between phenomenology and psychology (6.8). Lastly, I present some key features of the notion of subjectivity that emerges from Merleau-Ponty's phenomenology (6.9).

6.1 Transcendentalism, realism, and the personalistic attitude

Merleau-Ponty's main goal in *The Structure of Behavior* is, as he states in the very first sentence of the introduction, "to understand the relations of consciousness and nature" (1942/1963: 3). He frames this project in the context of two different views held by his contemporaries: "on the one hand, [a philosophy] which makes of every nature an objective unity constituted vis-à-vis consciousness and, on the other, sciences which treat the organism and consciousness as two orders of reality and, in their reciprocal relation, as 'effects' and as 'causes'" (ibid.: 4). The former view is that of Kantian transcendentalists[48] who see consciousness not as a part of nature but as its unifying condition of possibility, and the latter is the realist or naturalist view that consciousness is a part of natural reality that exists alongside, and stands in external relations of causality with, the physical body. Navigating between and revealing the inadequacies of both of these positions, Merleau-Ponty proposes a view of consciousness as, precisely, a *structure of behavior* – a meaningful and embodied mode of existence the reality of which is neither reducible nor external to the processes of the physical body but pertains to their *holistic organization*. And, *pace* the transcendentalists, he argues that this holistic sense of consciousness conceived as an experienceable natural phenomenon, together with unified forms of organization also exhibited by non-human living organisms and

[48] 'Transcendentalism' is my term for what Merleau-Ponty calls "critical thought" (ibid.: 3). Given that the core of this position is the idea of the transcendental significance of consciousness, I think 'transcendentalism' is a more precise and suitable name.

even non-living physical structures, cannot be conceived as the constitutive result of a disembodied transcendental consciousness, but must be seen as forms of self-organization emerging from *within* nature itself.

Both the transcendentalist and the realist positions remind us of ideas already encountered in our exploration of Husserl's phenomenology. First, the transcendentalist view is clearly reminiscent of Husserl's own transcendental-phenomenological position where consciousness, considered under the phenomenological reduction, is not itself a *phenomenon* of nature but that by which natural phenomena appear to us as such. It is however tendencies in Kantian philosophy, and perhaps especially the ideas of French neo-Kantians such as Léon Brunschvicg, that are the main targets of Merleau-Ponty's critique of transcendentalism. Indeed, in the few places where Husserl is mentioned in *The Structure of Behavior*, which happens only in the last quarter of the book, he is exclusively cited affirmatively by Merleau-Ponty. As we'll see below, rather than conceiving of Husserlian phenomenology as another instance of transcendentalism, Merleau-Ponty on the contrary seems to see it as the remedy needed to overcome the problems of both transcendentalism and realism.

Secondly, the realist position critiqued by Merleau-Ponty might seem to correspond to what we saw Husserl label the *naturalistic attitude* above. This attitude, remember, apprehends living bodies as composed of two kinds of features – the psychological and the physiological – standing in causal relationships to one another. However, while the realism Merleau-Ponty has in mind can surely be seen as an *instance* of the naturalistic attitude, the two are not completely co-extensive. For, there is nothing wrong with the naturalistic attitude *as such*: it is a necessary prerequisite for the scientific project of studying relations between the physiological body and psychological phenomena, which is a perfectly legitimate project. What is problematic, rather, is when the naturalistic attitude is employed in ways that distort the phenomena it is meant to account for. This, I think, is how we should understand the realism Merleau-Ponty wants to reject. In particular, his critique is directed at *atomistic* views in psychology and physiology that attempt to reduce psychological and biological phenomena to nature considered "*partes extra partes*" (ibid.: 3) – i.e., as consisting of nothing but complexes of discrete material entities and processes that stand in meaningless, purely external or mechanistic relations to each other. Thus, large parts of *The Structure of Behavior* are dedicated to revealing insufficiencies in theories (e.g., behaviorism) that, in various ways, attempt to explain behavior in terms of reactions to stimuli considered as atomistic, physical events bearing no real sense for the behaving organism as a whole.

In our exposition of Husserl above, we saw that one way that the naturalistic attitude can lead to distorted results is if one forgets its dependency on the *personalistic* attitude – the attitude whereby living bodies are apprehended as expressive unities animated by subjectively lived meaning-relations to their surroundings, which is what grounds the possibility of delineating living bodies as such in the first place. It is possible to see this kind of forgetfulness as the vice of the realistic position targeted by Merleau-Ponty, and in turn understand him as arguing for the necessity of keeping a personalistic view of organisms in play if we want to adequately understand the place of consciousness in nature. However, Merleau-Ponty is not content with making the rather abstract philosophical point that the naturalistic attitude presupposes the personalistic attitude. Rather, he dives into the scientific literature and engages in thorough analyses and critiques of the reasoning employed in atomistic research. And, crucially, in these discussions he draws extensively on scientific research that supports the holistic view he is advocating – in particular research conducted by the Gestalt psychologists and by Adhemar Gelb and Kurt Goldstein's holistic approach to the organism.

6.2 Gestalt psychology, phenomenology, and biological holism

The case of Gestalt psychology is of central significance when it comes to the issue of the relation between phenomenological philosophy and scientific psychology. Not only does it play a key role in Merleau-Ponty's philosophical project, but it also shares historical roots with the phenomenological movement. As mentioned in the chapter on Brentano, all three founders of Gestalt psychology – Max Wertheimer, Wolfgang Köhler, and Kurt Koffka – received their training as experimental psychologists under the guidance of Carl Stumpf, Brentano's student and Husserl's supervisor, colleague, and close friend. While their theory deviated from the views of Brentano and Stumpf in important respects (Ash, 1995: 95, 135), they maintained the idea of descriptive – or *phenomenological* – psychology as a necessary supplement to experimental research. Moreover, they were greatly influenced by the philosophy developed by Husserl in his *Logical Investigations*. As Ash notes, Husserl's position in that work – including his critique of psychologism, his notion of intentionality, and his analyses of part-whole relationships – "soon became one of the foundations of Gestalt theory" (ibid.: 76).[49]

The cornerstone of Gestalt psychology, launched in the second decade of the 1900s, is the idea that the primordial psychological phenomenon is the holistically organized *structure*

[49] Harrison (2016) offers a more thorough study of the relation between phenomenology and Gestalt psychology.

(*Gestalt*). With this thesis, the Gestalt psychologists rejected the view, prevalent at the time, that the primary units of consciousness are discrete sensations, assembled to appear as unified objects through a secondary operation of association or judgment.[50] This rejection was in part supported by phenomenological reasons. That is, the idea that consciousness is a composite of initially separate elements does not seem to find support in our actual lived experience and thus appears to rather be a product of unwarranted atomistic prejudices.[51] However, the Gestaltists also successfully conducted a range of experiments designed to test their theory as it applied to different psychological phenomena. Through studies of such things as (apparent) motion perception, visual illusions, auditory perception, and animal intelligence, they aimed to work out the laws pertaining to the organization of various kinds of perceptual Gestalts.[52] The view that emerged from these endeavors was one that saw perceptual phenomena neither as standing in a one-to-one correspondence with external physical stimuli (the so-called 'constancy hypothesis') nor as the result of intellectual judgments, but as primordial and spontaneous organizations of unitary *forms* defined by their functional significance relative to perceivers' interests and the total state of their nervous system (Ash, 1995: 143).

A significant expansion of Gestalt theory took place when Koffka argued that not only perceptual phenomena, but also *behavior* ought to be conceptualized in terms of Gestalts, i.e., as unitary structures irreducible to atomistic reflexes. In his words,

> [w]e may in fact place the experiencing of Gestalten squarely beside that of creating Gestalten; to sing or play a melody, dash off a sketch, write, and so forth, are not cases where one sings

[50] Gestalt psychology did not emerge out of nowhere. As Ash shows, there was always a 'holistically' oriented opposition running parallel to the atomistic views predominant among experimental psychologists and physiologists (1995, ch. 5, 6). Christian von Ehrenfels' essay, "On Gestalt Qualities," from 1890 is the perhaps most direct precursor to Gestalt psychology, laying many of the conceptual foundations that Wertheimer, Köhler, and Koffka would later elaborate, refine, and expand on (Ash, 1995: 88).

[51] Husserl made this point in his critique of Hume in *Logical Investigations*, asking rhetorically, "[d]oes our experience […] not first offer us a certain unitary content, that we afterwards say is compounded of parts, and is our saying this not due to a prior performance of certain novel operations?" (1900-1901/2001: 300).

[52] Wertheimer's (1912) research on the so-called *phi phenomenon* – the seeing of motion without an actually moving object – is considered Gestalt psychology's first experimental publication (Ash, 1995, pp. 125-129). In a paper officially authored by his student, Friedrich Kenkel, Koffka refined some of the assumptions made by Wertheimer and expanded on the Gestalt approach to motion perception through experiments making use of illusions such as the Müller-Lyer illusion (Kenkel, 1913; Ash, 1995: 139-140). Köhler's first contribution to Gestalt psychology was a paper presenting a range of experiments on auditory perception (1913; Ash, 1995: 135), before later moving on to study problem solving in various animals such as chickens and chimpanzees (1921/1925).

> or plays *tones*, or draws or writes *strokes*. *The motor act is an organized whole process*.'" (1915: 36-37; orig. emphasis; quoted in Ash, 1995: 144)

Koffka is here expressing an idea that is key to the notion of *structure of behavior* developed by Merleau-Ponty.

More loosely associated with Gestalt psychology, and thus also with the phenomenological movement, Gelb, a psychologist, and Goldstein, a neurologist, likewise proposed a holistic theory of the organism, developed through studies of pathological symptoms in brain-injured war veterans.[53] Taking the whole organism as it is concretely situated in its surroundings as their point of departure, Gelb and Goldstein argued that neither normal nor pathological behavior can be explained simply by reference to separately localized functions in the nervous system, but must rather be seen as expressions of the total organismic system's strive to maintain a functioning relationship to its environment. Thus, for instance, the pathological behavior resulting from a brain injury is not a direct, linear effect of the changes in the damaged area of the brain alone, but the result of a *re-organization* of the entire system, compensating for lost overall functioning by establishing a new form of 'balance' vis-à-vis the environment.

6.3 Structure: sense, emergence, and being-in-the-world

It is with the help of these forms of holistic thinking from psychology and neurology that Merleau-Ponty attacks atomistic explanations of consciousness and behavior. In fact, the first two chapters of *The Structure of Behavior* mostly read as a reiteration of arguments already articulated in the works of these earlier figures. Thus, in the first chapter, he discusses basic reflex behaviors, arguing that even in these 'primitive' cases the reactions of the organism cannot be understood as mere linear-causal effects of external physical stimuli. "[T]he excitation," Merleau-Ponty says, "will never be the passive registering of an external action, but an elaboration of these influences which in fact submits them to the descriptive norms of the organism" (1942/1963: 28). In other words, insofar as stimuli have any effect on an organism's behavior at all, it is because it comes imbued with a sense defined in the context of the organism's overall functioning and mode of existence: "The adequate *stimulus* cannot be

[53] E.g., Gelb and Goldstein (1920; 1925). Like the three original Gestalt psychologists, Gelb too received his laboratory training under the supervision of Stumpf, and he explicitly subscribed to many of their central ideas (Ash, 1995: 275-277). Without denying the close affinities between his own view and that of the Gestaltists, Goldstein was critical of the latter on some accounts, and cautioned against letting views in psychology guide neurological theory (ibid.: 280-282).

defined in itself and independently of the organism; it is not a physical reality, it is a physiological or biological reality" (ibid.: 31). Rather than a linear process of cause and effect, the picture that is painted here is that of a circular process where 'input' and 'output' co-determine each other so that, as Merleau-Ponty notes, "the sensorium and the motorium function as parts of a single organ" (ibid.: 36) defined by the possibilities and norms of equilibrium pertaining to the organism as a whole.

Merleau-Ponty employs a similar form of reasoning in the second chapter, now focusing on 'higher' or more complex forms of behavior such as human speech, and learning and problem-solving in non-human animals. One important claim here concerns the impossibility of reducing psychology to physiology, even if the latter goes beyond atomism by employing concepts such as processes of 'integration' and 'coordination' (ibid.: 76). The perception of a word, for instance, cannot be conceptualized as a purely physiological event triggered by the word conceived as "an ensemble of vibrations in the air," because, as he says, "no physiological phenomenon capable of serving as a substrate for the signification of the word could be described in the brain" (ibid.: 92). Words, that is, are defined by their *sense*, and this means that the physiological processes underlying word perception *presuppose* the word as "a melodic structure" within a sentence as "a unity of signification" – something that is not to be found *in* the nervous system but rather in the qualitative situation of the perceiver as a holistic mode of existence (ibid.). In other words, the physiological processes do not *cause* the perception of words as unities of sense – they are realized as the physiological *parts of* a holistic structure that must be explicated qualitatively in psychological terms. Thus, Merleau-Ponty concludes, "[p]hysiology cannot be completely conceptualized without borrowing from psychology" (ibid.: 93). This holds not only for phenomena pertaining to human life, such as language, but for all animal behavior: it is the realization of a *structure*, irreducible to physiological facts, in which the organism responds to external events defined by the *sense* they have within its global form of existence.

This, however, is not to say that all organisms' structure of behavior, and thus the sense they are responsive to, is of the same kind. Drawing on various studies of animals, including those of Köhler, Merleau-Ponty distinguishes three general types of structure of behavior, defined by the degree of flexibility pertaining to the organism-environment relationship. In *syncretic* forms of behavior, the behavior is "imprisoned in the framework of its natural conditions" (ibid.: 104), the organism instinctually responds to an environment with a fixed

sense that does not afford the learning of new behavioral relations.[54] In *amovable* forms of behavior, we find "the appearance of *signals* which are not determined by the instinctual equipment of the species", entailing a capacity for "true learning" (ibid.: 105; orig. emphasis).[55] And lastly, *symbolic* forms of behavior are characterized by the ability to respond to and express meaning-structures grasped as available to a multiplicity of perspectives and encompassing an indefinite range of particular cases, opening, among other things, the possibility of reckoning with *truth* understood as pertaining to the relation between sign and the signified (ibid.: 122).

Importantly, these three categories refer to types of structures of behavior and are not meant to clearly distinguish between different kinds of animals. As Merleau-Ponty says, "there is no species whose behavior *never* goes beyond the syncretic level nor any whose behavior *never* descends below the symbolic forms" (ibid.: 104). It is however clear that he sees the symbolic form of behavior as belonging exclusively to the human mode of existence. At the same time, this does not elevate us to the status of pure and disembodied consciousnesses: symbolic forms of behavior are still structures of organisms' bodily modes of interacting with their world – a world perceived primarily as a field "pervaded with lines of force" soliciting bodily activity (ibid.: 168) – in ways that involve, depend on, and *organize* their whole physiological apparatus.

This approach has the consequence of dissolving the dualistic schema traditionally (at Merleau-Ponty's time) employed in thinking about behavior. When grasped in terms of *structure* in this way, that is, there is no longer any tenability in strict divisions between pure sensations on the one hand and perception or intelligence on the other, or between the physiological and the psychological, understood respectively as mere mechanism versus pure mentality.[56] Rather, we are now talking about "different types or levels of organization" (Merleau-Ponty, 1942/1963: 91), where some are more rigidly determined by the organism's physiological set-up than others, but where none are completely devoid of sense nor fully

[54] Merleau-Ponty here mentions as an example the case of a toad that, despite previous failures, continues its attempts to catch an earthworm that is separated from it by a glass (ibid.: 105).
[55] For instance, in one of Köhler's experiments he shows that chickens trained to eat grain from a pile marked with one shade of gray rather than another are not simply conditioned to respond in the same way to one specific color nuance, but have rather learned to operate with the relation 'darker than' (ibid.: 106).
[56] With this, Merleau-Ponty is fully in line with the program of Gestalt psychology, which, as Ash observes, "began as a radical revision of three overlapping dualisms that dominated perceptual theory and research in the last third of the nineteenth century: sensation versus intellect, peripheral versus central processes, and physiological versus psychological categories" (1995: 52)

detached from a bodily situation. In Merleau-Ponty's words, behavior belongs neither to the order of the "in-itself" nor to the order of the "for-itself" (ibid: 125). "It does not," as he says, "unfold in objective time and space like a series of physical events" (as a pure thing, an 'in-itself'), but is rather "the projection outside the organism of a *possibility* which is internal to it" (ibid.; orig. emphasis). And on the other hand, behavior is not the indirect revelation of a 'consciousness' (a pure subject, a 'for-itself') "hidden behind the visible body" (ibid.). Rather, Merleau-Ponty says, "[t]he gestures of behavior, the intentions which it traces in the space around the animal" must be understood as "a certain manner of treating the world, of 'being-in-the-world' or of 'existing" (ibid.: 125-126) that is expressed in and realized through the organism's visible behavior.

With the hyphenated expression 'being-in-the-world', Merleau-Ponty is here undoubtedly – though without citing him – invoking the terminology of Martin Heidegger's *Being and Time* (1927/1996). There, Heidegger aims to replace the traditional philosophical view of humans as essentially thinking and knowing subjects that stand in a distanced relation to the world conceived merely as an object before our gaze, with the view that we are essentially *world-involving* forms of existence – i.e., beings whose essence is inseparably tied to the world as the field within and towards which we exist (ibid.: 49). This, of course, fits well with the idea of structures of behavior developed by Merleau-Ponty, which sees living beings precisely as defined by the ways they meaningfully interact with their surroundings. Below we'll see that the turn in the phenomenological movement represented by Heidegger, who transformed phenomenology from a mostly epistemological to an *ontological* project, is key to understanding the conception of phenomenology that Merleau-Ponty lays out in *Phenomenology of Perception*.

Merleau-Ponty's notion of structures of behavior seems to entail a view of these phenomena as *emergent* natural phenomena, displaying a type of reality irreducible to the properties of its components considered in isolation. "Form," he says,

> possesses original properties with regard to those of the parts which can be detached from it. Each moment in it is determined by the grouping of the other moments, and their respective value depends on a state of total equilibrium the formula of which is an intrinsic character of 'form.' (1963: 91)

In other words, while structures of behavior are completely dependent on their parts in the sense that they are the holistic organization of those parts and would be nothing without them, the parts are in turn dependent on the whole for their value and function, and can as such work

to explain the reality of the structure only as long as they are considered precisely *as* parts of the structure as a whole. This idea resembles what Evan Thompson, in his seminal work of enactivist literature, *Mind in Life*, calls *dynamic co-emergence*: "Dynamic co-emergence means that a whole not only arises from its parts, but the parts also arise from the whole. Part and whole co-emerge and mutually specify each other" (2007: 38). And indeed, Thompson dedicates a whole chapter in that book to *The Structure of Behavior*, showing how Merleau-Ponty's ideas can inform the enactive view and in turn be enriched by the enactive theory of autonomy and other more recent developments in the sciences of mind and life (ibid.: ch. 4).

6.4 Merleau-Ponty's critique of Gestalt psychology

While it is ultimately correct to see *The Structure of Behavior* as proposing a form of emergentist view of life and mind, it is important for our purposes to get a better grasp of Merleau-Ponty's reasoning about the ontological status of the Gestalts that define these phenomena. This is because we there find both an important critique of parts of Gestalt psychology, as well as the motivation for Merleau-Ponty's more explicit turn to phenomenology in *Phenomenology of Perception*.

In the first two chapters of *Structure of Behavior*, Merleau-Ponty aims to establish the explanatory supremacy of Gestaltist over atomistic approaches, but he leaves open the question as to what the structures or Gestalts in question *really are*.[57] Thus, he concludes the second chapter with the following statement:

> Up until now [the notion of form] has been introduced by physical examples and defined by characteristics which made it appropriate for resolving problems of psychology and physiology. Now this notion must be understood in itself, without which the philosophical significance of what precedes would remain equivocal. (1942/1963: 127-128)

In chapter three, Merleau-Ponty addresses this issue by highlighting what he sees as an inconsistency that haunts Gestalt theory – at least as developed by some of its proponents. The inconsistency concerns their subscribing to a form of materialism that, as he sees it, is unwarranted from the perspective of an appropriate conception of their own notion of form (Gestalt). In short, the materialism in question is one that sees the structures characteristic of mental and biological behavior as ultimately explainable by appeal to *physical* structures.

[57] See Sheredos (2017) for a detailed reading of the first chapters of *The Structure of Behavior* that focuses on what he calls 'the open ontological question' and Merleau-Ponty's critique of the Gestaltists.

In *The Structure of Behavior*, this view is mainly represented by Koffka's *Principles of Gestalt Psychology* (1936). Here, Koffka distinguishes between an organism's *behavioral* and *geographical* environments, which correspond respectively to the environment as a domain of meaning for the organism and the organism's surroundings as they are described by the physical sciences. According to Koffka, it is the latter that will give us the ultimate explanation of behavior. "[I]n our *ultimate* explanations," he says, "we can have but *one* universe of discourse and that must be the one about which physics has taught us so much" (ibid.: 48; orig. emphasis).[58] He also claims that the behavioral and geographical environments are causally connected, with "the geographical environment being a cause of the behavioral" (ibid.: 49). A key idea here, which is supposed to ease our understanding of how these two domains can be related, is that Gestalts can be found not only at the psychological level, but also in the universe of physics. Thus, the thought goes, psychological phenomena can be accounted for, in the sense of being conceived as grounded in natural reality, by discovering *isomorphic* relationships – i.e., relations of structural similarity – between Gestalts at the psychological level and Gestalts at the physical level of description, which in this case primarily means descriptions of neuronal dynamics.

The problem with this model, according to Merleau-Ponty, is that it contradicts a core insight of Gestalt theory: the idea that Gestalts are essentially defined by the *internal* relations that constitute them as holistic forms, and as such are irreducible to any factor considered as external to this whole. If we want to consistently hold on to this idea, we cannot understand reality as ultimately equivalent to the universe of physics. Rather, as Merleau-Ponty says, "there could be only one universe which would be *the universe of form*" – i.e., a universe populated with different kinds of structures that are "invested with equal rights" and exhibit an irreducible *originality* in their constitution (1942/1963: 133; my emphasis). This is neither to deny the existence of Gestalts in the universe described by physics, nor to claim that psychological and biological Gestalts somehow exist independently from physical nature. The point, rather, is that these Gestalts are different in *kind*: the structural features and organizational principles that define physical structures as such – i.e., as entities disclosed by the physicist – are not the *same* as those that define the structures of behavior of living and psychological beings. Conceived in this way as structures in their own right, with the kind of originality by which they are apprehended within the descriptive universe of physics, physical processes cannot be understood as the ultimate cause of or foundation for psychological and

[58] Also quoted by Merleau-Ponty (1942/1963: 133).

biological structures, for this entails considering the physical as *external* to these other kinds of structures and hence, by definition, as insufficient for accounting for their reality *qua* structures. Rather, if we want to understand how these structures are related to physical nature, we need to see the physical processes that subtend their existence as *internally* related to – i.e., as *participating in* – their holistic constitution and thus not as independent, physical structures in their own right.

To support this view, Merleau-Ponty proceeds to distinguish and describe three mutually irreducible orders of structure, or, what amounts to the same, three original orders of reality in the universe of form: the physical, the vital, and the human order (ibid.: ch. 3). A key idea here is that the structures of the different orders are unities characterized by different kinds of equilibrium. In the case of 'mere' physical structures, e.g., soap bubbles, the conditions on which their equilibrium depends are fully specifiable in terms of physical laws and properties that exist whether or not the structure in question exists. Structures in the vital order (the being and behavior of living organisms), on the other hand, maintain a form of individuality and equilibrium with respect to what Merleau-Ponty calls *virtual* conditions – i.e., conditions "which the system itself brings into existence" (ibid.: 145). In other words, living organisms uphold themselves as such by operating according to norms concerning their continued viability – norms that are *enacted by the organisms themselves* and would not exist in their absence. And finally, in the human order, we find structures of behavior defined by their inhabiting an *intersubjective* and symbolic world, "a world of things visible for each 'I' under a plurality of aspects" (ibid.: 175), which subtends and enables a behavioral flexibility and creativity not found in the vital order; namely, that of "orienting oneself in relation to the possible, to the mediate, and not in relation to a limited milieu" (ibid.: 176).

As said, each of these orders is irreducible to any of the others: the vital order displays an originality not to be found in the physical order, and the human order likewise cannot be reduced to the vital order. At the same time, it is obviously the case that organisms are physical beings, and that humans in turn are organisms. Rejecting the idea that the originality of each order is due to the possession of some kind of extra ingredient or substance that is placed 'on top of' the previous one, such as a 'vital force' (vitalism's *élan vital*) in the case of the organism or a rational soul in the case of humans, Merleau-Ponty argues that each new order ought rather to be seen as a *restructuration* of the previous one (ibid.: 184). Thus, the vital is founded on the physical, but organized in a way that 'liberates' it from some of the conditions pertaining to the physical order, and the human is similarly, by virtue of its organization, both founded on and liberated from the vital order (ibid.). In this model, we do not see a causal hierarchy

between 'levels', but rather a *dialectical integration*, where the emergence of vital structures is characterized by giving a new *sense* to the physical as incorporated into a biological mode of existence, and likewise in the case of human structures' relation to the vital.

This view of the relations between the physical, the biological, and the human is also central to the enactive approach. In particular, the idea that living organisms are organizations of physical matter that enact the norms for their own continued existence, generating their own identity and specifying an environment of *sense* or value relevant for that identity, is a crucial component of the enactivist idea of living organisms as adaptive autonomous systems. Key here is the thought that this form of organization involves the realization of *intrinsic purposiveness* and a meaning-constitutive point of view on part of the organism, which is essential to enactivists' naturalization of subjectivity by way of their thesis of mind-life continuity (Di Paolo, 2005, 2018; Thompson, 2007; Weber and Varela, 2002).[59] Enactivists' articulation of this idea draws inspiration not only from Merleau-Ponty, but also from the 'existential biology' or phenomenology of life developed by Jonas (1966). This so-called "Jonasian turn" (Villalobos and Ward, 2017) in enactivism, which ascribes purposiveness and sense-making also to non-human organisms, has been criticized for being unscientific and anthropomorphic. In A3, Hverven and I aim to dismiss the adequacy of this form of critique by elaborating on Jonas' arguments for recognizing intrinsic teleology in non-human life.

That the human, symbolic form of existence in turn involves a restructuration of – and relative liberation from – biological conditions is an idea that is given a thorough enactivist account in the book *Linguistic Bodies* (Di Paolo et al., 2018).

6.5 Towards a transcendental philosophy of nature?

We are however still not done with the issue of the ontological status of structures of behavior. A decisive point in the dialectic of *The Structure of Behavior*, which motivates Merleau-Ponty's turn to phenomenology and his project in *Phenomenology of Perception*, is the observation that structures are *perceptual* phenomena. As he says, "form is not a physical reality, but an object of perception" (1942/1963: 143). And again, "what we call nature is already consciousness of nature, what we call life is already consciousness of life and what we call mental is still an object vis-à-vis consciousness" (ibid.: 184). How are we to understand

[59] See A2 for my most extensive elaboration of this thesis.

this, which, as Merleau-Ponty himself acknowledges (ibid.: 206), can seem like a relapse into the transcendentalism he set out to overcome in the introduction?

Merleau-Ponty's core idea here is indeed a transcendental one. What it means for us that something displays a physical, vital, or human structure, the thought goes, is essentially connected to how these structures appear to us in perception. Thus, we cannot define these structures in isolation from their perceptual manifestation – to do this would amount to a distortion of their true meaning, a detachment from the context in which their essence – sense – is primarily revealed. This is what happens when Koffka claims that psychological form can be founded on physical form. Assuming that psychological forms only enjoy a kind of secondary existence, derived from the ultimate reality of physical forms that lurks behind the psychological's phenomenal appearance, he not only loses sight of the originality of psychological forms but also neglects the fact that physical forms, too, are perceptual phenomena. As Merleau-Ponty says, "far from the 'physical form' being able to be the real foundation of the structure of behavior and in particular of its perceptual structure, it is itself conceivable only as an object of perception" (ibid.: 144). And, crucially, as objects of perception, physical forms are *essentially different* from vital and human forms.

We see here a clear similarity to the reasoning underlying Husserl's turn to phenomenology in his *Logical Investigations*. That is, the idea that the essence of any possible object for consciousness must be grasped by an analysis of its internal constitution as it appears *in* the intentional acts where it shows itself and cannot be delegated to factors external to this manifestation. Just like Husserl in that work argues that the essence of logic cannot be reduced to mere psychological contingency, Merleau-Ponty's claim is that human and vital structures of behavior cannot be reduced to physical structures but must be grasped in a way that does justice to their manifestation in the intentional act wherein they primarily reveal themselves as what they are – i.e., in perception.

On Merleau-Ponty's view, both realism and transcendentalism can be seen as springing from a failure to properly grasp the nature of perception. In brief, they both presuppose a form of separability between subject and object, with realism assuming that consciousness ultimately can be reduced to pure, subject-less objectivity, and transcendentalism assuming that nature ultimately can be reduced to objects constituted by a pure, non-objective subject (ibid.: 219).

We are here faced with an antinomy of the same kind as the paradox of subjectivity that we encountered in our exploration of Husserl. In Merleau-Ponty's words, consciousness here "appears on the one hand to be part of the world," as an object besides other objects, "and on the other to be co-extensive with the world," as the subjectivity that grounds all appearances

of the world (ibid.: 215). According to Merleau-Ponty's diagnosis, both realism and transcendentalism fail to properly understand this apparently paradoxical situation because they fall prey to a "natural error" of consciousness (ibid.: 219). This error stems from the fact that consciousness is naturally directed towards *things*: on the one hand, we have external things, and on the other, we have consciousness as a thing that must either exist alongside external things or be the ultimate container of all other things. By leaving this natural tendency of consciousness unquestioned, however, one is not in position to actually grasp its foundational structures, i.e., that which enables us to arrive at the notions of 'subject' and 'object' in the first place. In order to manage this, Merleau-Ponty says, it is necessary "to impose upon oneself an inversion of the natural movement of consciousness" and "return to perception as to a type of original experience in which the real world is constituted in its specificity" (ibid.: 220). If this sounds familiar, it is because Merleau-Ponty is here – as he acknowledges in the endnote attached to the quoted sentence – stating the need to employ *the phenomenological reduction* as defined by Husserl (ibid.: 249n56).

Even though Merleau-Ponty dedicates little space to phenomenology in *The Structure of Behavior*, it is clear from this that he sees phenomenology as bearing the promise of overcoming traditional transcendentalism. It is this potential he proceeds to explore in more detail in *Phenomenology of Perception*. Before we look at some parts of that work, let's first see how the ground for that book is prepared in the critique of transcendentalism found in the last pages of *The Structure of Behavior.*

In Merleau-Ponty's rendering, traditional transcendentalism is defined by the idea that consciousness is essentially *intellectual* consciousness – a pure, thinking subject standing over against a world of objects characterized by the significance they have *as objects of thought*. From this perspective, all objects for consciousness are *significations*, ideal entities synthesized as such by the thinking subject's activities so as to *make* intelligible order in an otherwise alien and unintelligible universe, and must thus, ultimately, be seen as belonging to the side of the subject rather than that of the world 'in itself'.

The problem with this line of thinking is that both the notion of subjectivity and the notion of objects that is assumed here are inadequate when applied to perceptual experience, which, after all, is our primordial encounter with things. In perception, we are primarily presented with *Gestalts* and, as Merleau-Ponty says,

> [w]hat is profound in the notion of 'Gestalt' […] is not the idea of signification but that of *structure*, the joining of an idea and an existence which are indiscernible, the contingent

> arrangement by which materials begin to have meaning in our presence, intelligibility in the nascent state. (ibid.: 206-7; orig. emphasis)

Thus, even though Gestalts are characterized by their sense, this is not in the first instance the sense of ideal significations correlated to a thinking consciousness, but a sense inherent *in* sensible, existing things as they reveal themselves in perception. To illustrate, consider how, by changing a small part of a perceived circle, e.g., by redrawing it so as to make it a less perfect circle, one can alter the whole physiognomy of the circle, giving it a new *sense* that appears as such only thanks to how it is embedded in its concrete situation, e.g., as a figure drawn on a white sheet of paper (ibid.: 144; Sheredos, 2017: 209). In contrast, the *signification* 'circle' will be applicable to the circle both before and after this alteration (e.g., in terms of more and less perfect circles), and is not, *qua* signification, dependent on a concrete perceptual situation in the same way. The same is true of the perceptual manifestation of structures of behavior: our primordial consciousness of vital and human structures is not a grasping of ideas detachable from the world, but an encounter with forms of sense inseparably tied to and expressed through modes of *existence* that stand out as such thanks to the ways they are embedded in their surroundings.[60]

We arrive at a similar result when we compare transcendentalism's notion of subjectivity to the subjectivity of perceptual consciousness: it too is revealed as an idealization that neglects the concrete existence from which it is drawn. Thus, Merleau-Ponty says, "[w]e are not reducible to the ideal consciousness which we have of ourselves any more than the existent thing is reducible to the signification by which we express it" (1942/1963: 221). Rather, transcendental consciousness, which transcendentalism construes as an ever-present, pure subjectivity, is an abstraction emerging from a more concrete ground: it "is not ready made; it is to be achieved, that is, realized in existence" (ibid.). In effect, Merleau-Ponty's idea is that consciousness is revealed as an embodied existence, a structure of behavior, not only when viewed 'from the outside,' as an observed phenomenon, but also when viewed 'from the inside,' as the subject of perception. Thus, he points to the fact, which we saw Husserl recognize above (5.6), that the perspectival appearances of the things we perceive refer back to us as embodied presences that are involved *in* the world we perceive (ibid.: 217). Moreover, he says, we experience our "inherence in an organism at each moment" – not as a consciousness of our body as an object before us, but as "a presence to consciousness of its proper history and

[60] This idea is central to A3, where Hverven and I argue that Jonas' ascription of purposiveness to non-human organisms should be seen as motivated by concrete encounters rather than by anthropomorphic inferences from analogy.

of the dialectical stages which it has traversed" (think genetic phenomenology) – and we constitute ourselves "in the contingency of existence" (ibid.: 208, 210). In other words, our perceptual subjectivity involves a *sense* of the physical, vital, and human moments that our existence integrates, and this sense is constituted and revealed to ourselves through the ways we interact with and are embedded in the world. And further, as indicated above, at this primordial level of consciousness, things are "lived as realities […] rather than known as true objects," making consciousness "nothing other than the dialectic of milieu and action" (ibid.: 168, 169). In short, consciousness is here conceived as the constitution of a structure of behavior through its dialectical participation in a 'universe of structures' of which it is a part. From this perspective, then, the subject-object schema of transcendentalism is not an articulation of a structure that is always implicitly present in our conscious lives, "an eternal 'condition of possibility'" (ibid.: 223), but rather signals the appearance of a secondary, idealized mode of consciousness arising from our existential ground as structures of behavior.

While Merleau-Ponty thus rejects the traditional conception of transcendental consciousness and its objects, it should not be seen as a rejection of all forms of transcendental thought, in the sense of reflections on the conditions of possibility for the appearance of objects for consciousness. As we have seen, he insists that structures be understood as perceptual phenomena rather than 'things in themselves', and as such ascribes a transcendental significance to perception. The crucial twist, however, is that perceptual consciousness, even when considered in its transcendental function, is here not simply a subject for which structures are constituted but must *itself* be recognized as a structure of behavior. Thus, the idea of transcendental 'conditions of possibility' is radically revised, from something located in a pure and detached subjectivity to something that is realized in and through an *existence* where there is not yet any clear distinction between subject and object. In short, we might say that Merleau-Ponty here transforms a transcendental theory of subjectivity into an *ontology of structure*.[61]

[61] I do not presume to here have provided a knock-down argument for why *The Structure of Behavior* should be read in this ontological direction, but I hope to have shown that such a reading is at least possible, and to thus have given a sense to the way I approach Merleau-Ponty's philosophy. Other interpretations – e.g., placing more emphasis on the transcendentalist flavor of Merleau-Ponty's claims – are certainly possible, and in any case more would have to be said about the contents of the 'ontology of structure' and what is meant by 'ontology' in this context. I give some more substance to these ideas in subsequent sections, but readers expecting a comprehensively justified and articulated ontology to emerge in this introductory essay will probably be disappointed. Toadvine (2009) and Morris (2018) provide more systematic articulations of the ontology and philosophy of nature that can be found in *The Structure of Behavior*, and in A1 I draw attention to ontological elements in *Phenomenology of Perception*.

Merleau-Ponty's ontology of structure comes with some interesting methodological implications, which can be seen as a precursor to the enactivist idea of 'mutual enlightenment' between phenomenology and the life and mind sciences. These implications can be expressed, in a nutshell, by saying that the notion of consciousness as a structure of behavior is an *integrative* concept. That is, grasping the nature of consciousness conceived as a structure of behavior demands an integration of various scientific and philosophical approaches. Merleau-Ponty shows this in practice in the way he develops his ontology through considerations of neurological and psychological studies. As an organization of physical, vital, and human conditions, consciousness is a phenomenon that lends itself to a multiplicity of perspectives, where no single perspective can provide an exhaustive grasp of the whole phenomenon, but where different perspectives give access to different *parts* of the whole, making our concept of the whole emerge through thinking these perspectives together in a dialectical integration. Thus, we have seen that both the 'objectivist' approach of realism and the 'subjectivist' approach of transcendentalism contain *some* truth: consciousness *is* part of the world, dependent on the contingencies of physical nature and observable from the 'outside', and it is *also* that through which anything has a sense for us, an irreducible field of meaning that is apprehensible from the 'inside'. The failure of both of these approaches is their subscription to a dichotomous schema that hinders them from seeing that consciousness is *neither* a pure object *nor* a pure subject, but that both of these categories are inadequate idealizations from a *structural existence* that incorporates both objective and subjective elements in an inseparable manner.

It is in this ontology of structure that one can find the germ of a philosophy of nature in Merleau-Ponty's thinking. In short, the idea is that *The Structure of Behavior*'s reflections on the ontological status of structure leads toward a view of structures, with their inherent sense, as genuinely *natural* phenomena. "'Structure'," as he says in the conclusion, "is the philosophical truth of naturalism and realism" (ibid.: 224). True, we saw above that Merleau-Ponty denies that 'form' is a physical reality, claiming that it must rather be understood as a perceptual phenomenon. However, as used by Merleau-Ponty, the term 'physical reality' should be understood as referring to the *'partes extra partes'* view of nature that some ascribe to the physical sciences – and there is no doubt that Merleau-Ponty rejects that *that* can serve as a ground for forms. Moreover, we have seen that, on his view, for something to be a perceptual phenomenon is not the same as it being merely *subjective* – it is something that "constitutes, alters and reorganizes itself before us like a spectacle" (ibid.: 224) prior to any attempt to make it intelligible for intellectual thought, and which refers back to the perceiver

as an existence of the same sort as the perceived, i.e., a structure. Thus, it would seem that, rather than simply claiming that in order to understand vital and mental phenomena we must superimpose a 'merely' perceptual 'universe of forms' upon an ultimate, physical reality, Merleau-Ponty is advocating for a radical *rethinking* of nature itself, construing it *as* a universe of forms – a world of inherently meaningful structures defined by different orders of organization – that must be grasped through a multi-perspectival approach guided by the *sense* of phenomena revealed to us in perception. Considering what we have already seen concerning the convergences between enactivism and *The Structure of Behavior*, it will hardly be a surprise that many enactivists see their project as involving a rethinking of nature along similar lines, positing mind and life as irreducibly meaningful structures inherent in the organization of natural processes (Thompson, 2007; Gallagher, 2018). This enactive-phenomenological rethinking of nature is, as mentioned, one of the dissertation's key topics: It figures in A1 as a necessary component of the integrationist view concerning the transcendental and the empirical, in A3 it is present in the form of the Jonasian teleological view of non-human organisms, and in A4 I make it the center of attention, defending it against naturalist objections and clarifying how it is connected to the phenomenological perspective and its involvement in the enactivist method of mutual illumination.

This is not to say that Merleau-Ponty delivers a fully developed philosophy of nature already in *The Structure of Behavior*. Many questions are still left unanswered, and it is common to read it as concluding on a somewhat ambiguous or unresolved note.[62] One issue that Merleau-Ponty himself explicitly recognizes as requiring more work, is that of the relation between perceived structures and the significations by which we think and conceptualize those structures – what he calls "[t]he problem of perception" (1942/1963: 224). That is, although the structures given us in perception are not idealized significations, our thinking and speaking about these structures – for instance in terms of physical, vital, and human structures – involves referring to them by way of such idealizations. The issue then becomes, how is this possible, what is really going on here, and how is the meaning of our significations related to the sense of the perceived structures they aim to express? These are questions that occupied Merleau-

[62] Morris (2018), for instance, argues that *The Structure of Behavior* ultimately leaves the issue of the relation between nature and sense unsettled. This is because Merleau-Ponty here, on his reading, still accepts the *partes extra partes* conception of nature (2018: 67). And Toadvine, though he does not see Merleau-Ponty as subscribing to the 'realist' concept of nature, also finds a too subjectivist flavor in *The Structure of Behavior* (2009: 24). This is not the place to delve into these issues. As indicated in the previous paragraph, however, I think it is possible to read Merleau-Ponty, *pace* Morris, as rejecting the realist concept of nature.

Ponty through the rest of his career, leading him, in *Phenomenology of Perception* and later works, to make language and other forms of expression a central focus of his studies.[63]

After drawing attention to the problem of perception, Merleau-Ponty – famously – concludes *The Structure of Behavior* by stating the need to "define transcendental philosophy anew in such a way as to integrate with it the very phenomenon of the real" (ibid.). This, then, is the set-up for his phenomenological project in *Phenomenology of Perception*.

6.6 Existential phenomenology

We saw above that Merleau-Ponty in *The Structure of Behavior* appeals to Husserl's phenomenological reduction as the reflective step required to think perception properly and thus to grasp the nature of structures. In light of this, it seems clear that it is phenomenological philosophy that for Merleau-Ponty bears the promise of the redefined transcendental philosophy he calls for in the conclusion. One central question here is whether this redefinition is already effectuated by Husserl, or whether Merleau-Ponty's phenomenology involves a break from the thoughts of its predecessor. As already noted, I have in this introductory essay pursued an interpretation of Husserl and Merleau-Ponty that emphasizes the continuity between their projects. There is however one event, commonly understood as a development of phenomenology beyond Husserl's own conception, which is crucial for understanding Merleau-Ponty's notion of phenomenology; namely, the ontological or existential turn effectuated by Heidegger's *Being and Time* (1927/1996).

We made a brief encounter with existential phenomenology above in connection with the Heideggerian term 'being-in-the-world.' In the story of the phenomenological movement, Heidegger – Husserl's star student and, for a time, the designated heir to his phenomenological project – represents a shift in, or expansion of, the conception of phenomenology. In short, where Husserl was primarily concerned with the epistemological function of consciousness, i.e., its status as foundation for our *knowledge* of objects, Heidegger's project in *Being and Time* is *ontological*, aiming to elucidate the *being* of human subjectivity (*Dasein*, in his terms) and the world it inhabits. [64]

[63] E.g., chapter VI, "The Body as Expression, and Speech," of *Phenomenology of Perception* (1945/2012), the essays compiled in *The Prose of the World* (1969/1973), and his lectures on language acquisition and child psychology (2010).
[64] Some of the essays included in the recently published *The Existential Husserl* (Cavallaro and Heffernan, eds., 2022) might challenge this way of seeing things.

Both Husserl and Heidegger saw Heidegger's move here as representing something of a break with the ideas of Husserl's phenomenology. For Heidegger, Husserl's phenomenology was too caught up in traditional philosophical notions of consciousness and subjectivity, and his idea of transcendental phenomenology signaled a relapse into idealism and a neglect of the primordial status and significance of being. And for Husserl, Heidegger's project represented a misunderstanding of the phenomenological reduction and hence a failure to reach a genuinely philosophical and transcendental position, making it instead a case of mere anthropology.[65]

Spiegelberg describes the difference between the two in terms that remind us of the paradox of subjectivity. For Husserl, he says, "man is an entity constituted by his consciousness," whereas, "for Heidegger, consciousness, even in its sublimated phenomenological form, is conversely an activity of man, constituted by him" (1971: 303).[66] In other words, for Husserl, as we have seen, the empirical subject – "man" – is an object-correlate of transcendental consciousness, while Heidegger construes consciousness as an achievement of human existence. According to Spiegelberg, the difference between these views ultimately boils down to a difference in focus, with Husserl being primarily interested in "the epistemological aspect (How do we know about man?)" and Heidegger in "the 'ontic' angle (What is Being and what are the foundations for philosophizing and phenomenologizing in the midst of it?)" (Spiegelberg, 1971: 303). It is however possible to see this difference in focus as based in a more fundamental disagreement, concerning the relation of philosophical primacy between epistemological and ontological questions. That is, do we need to first clarify how and what we *know* before positing what *is*, or should our epistemology be based on a primary understanding of the *being* of knowers and their objects? From this perspective, the ontological or 'existential' critique of Husserl can be understood as involving the claim that his prioritizing of epistemology commits him to an inadequate – idealist and intellectualist – ontology of subjectivity and its world.

How exactly one should understand the relations between Husserl's and Heidegger's projects is a question that goes beyond the scope of this introductory essay. I bring it up only as a background for making sense of Merleau-Ponty's conception of phenomenology. Interestingly, Merleau-Ponty clearly subscribes to Heidegger's existential interpretation of phenomenology, while at the same time construing his project much more in continuity with

[65] See Spiegelberg's (1971) chapter on Heidegger as well as Heinämaa (2017), who outlines and assesses some of Heidegger's main objections to Husserl.
[66] I hope the reader can forgive the outdated gendered language in the passages I quote in this paragraph.

Husserl's phenomenology than Heidegger did (Zahavi, 2002). To see this, we can note that Merleau-Ponty's critique of transcendentalism in *The Structure of Behavior*, where he argues that transcendental consciousness is not a primordial condition but rather an achievement of a more fundamental structure of *existence*, coheres well with how Spiegelberg describes Heidegger's view of consciousness in contrast to that of Husserl. And at the same time, we have seen that, for Merleau-Ponty, Husserl's phenomenology is not the target of this critique but on the contrary represents a way to overcome the antinomy of realism and transcendentalism. I've also tried to motivate this interpretation of Husserl above by emphasizing the elements of his phenomenology that point toward a more integrated conception of the relation between the transcendental and empirical aspects of subjectivity.

Merleau-Ponty's existential conception of phenomenology is clearly stated in the introduction to *Phenomenology of Perception*, where he argues that the phenomenological reduction "[f]ar from being, as was believed, the formula for an idealist philosophy, […] is in fact the formula for an existential philosophy" (2012: lxxviii). This must be understood in connection with his famous claim that "[t]he most important lesson of the reduction is the impossibility of a complete reduction" (ibid.: lxxvii) – a claim that I ascribe much significance when I in A1 make the case for rethinking the transcendental within the integrationist view. In short, the idea is that the phenomenological reduction reveals the impossibility of construing the world towards which we are experientially directed *purely* as a world *for* our reflecting consciousness. That is, the result of attempting to suspend the general thesis of the natural attitude is not that we disclose the world as a purely subjective field of objects *for* consciousness, but rather that we discover our inseparable, pre-reflective involvement in a world that always exceeds our reflective endeavors. In other words, the phenomenological reduction reveals the executor of the reduction as an intrinsically *world-involving* form of existence. According to Merleau-Ponty, this means that "Heidegger's '*In-der-Welt-Sein*' [being-in-the-world] only appears against the background of the phenomenological reduction" (2012: lxxviii).

It is difficult to assess exactly how this situates Merleau-Ponty's phenomenology relative to that of Husserl. On the one hand, his emphasis on the importance of the reduction establishes a clear methodological continuity between the two. On the other, his interpretation of the reduction – as impossible to complete and as leading to an existential philosophy – might

be seen as diverging from Husserl's.[67] Concerning the latter, we should remember that Husserl denies that the reduction involves an actual elimination of our presuppositions regarding the world's independent existence. Thus, if that is what a 'complete reduction' is supposed to be, he would agree that it is impossible. If, however, a complete reduction means a position from which all the structures by which consciousness relates to its world are made directly accessible to the reflecting subject, it might be easier to make the case for a difference between Husserl and Merleau-Ponty. In short, where Husserl, as we saw above, holds that phenomenology discloses a field of apodictic evidence graspable in terms of pure essences, Merleau-Ponty sees the primordially pre-reflective nature of perception as an obstacle to this idea. In his words, "[t]he evidentness of perception is neither adequate thought nor apodictic evidentness. The world is not what I think, but what I live" (2012: lxxx). That is, the idea that the phenomenological field provides apodictic evidence seems to presuppose that it is ready-made for reflective thought, that its structures can be fully and directly grasped by philosophers' pure concepts, but this presupposition is disconfirmed by the lived and pre-reflective nature of perception that according to Merleau-Ponty is revealed by the phenomenological reduction.

One implication of this is that the phenomenological study of the structures of being-in-the-world comes to require an *indirect* and *interpretative* approach. We cannot, that is, fully grasp all the modes of our world-involvement 'head on' through descriptions of how the world manifests to us in our experiences, for what we thus describe will be experience as the correlate of a *reflective* attitude and as such *something else* than the pre-reflective life of experience. In order to illuminate the latter, then, we must find ways by which its structures can be *indicated* to the reflective perspective, a type of evidence that – even though it is not the apodictic presence to consciousness of the pre-reflective as such – can serve as a ground for interpretative phenomenological articulations of our primordial modes of being-in-the-world. This can be done, for instance, by considering cases of *breakdowns* or *distortions* in our ways of engaging with the world. Thus, Heidegger (1927/1996) develops his notion of the 'readiness-to-hand' – our practical and pre-reflective mode of being towards things as use-objects – in light of the experience of having this mode of being abrupted (e.g., the hammer breaks and thus seizes to fulfill its function as use-object, seizes to be ready-to-hand). Somewhat similarly, a key strategy employed by Merleau-Ponty in *Phenomenology of Perception* is to consider cases of psychological pathology and see what such deviations from our normal functioning can tell us

[67] Taylor Carman, for instance, claims that Husserl's idea of the phenomenological reduction is "fundamentally incompatible" with Merleau-Ponty's philosophy (2008: 39).

about the structures of our being-in-the-world. In A1 I show how Merleau-Ponty develops his notion of motor intentionality through this kind of approach, arguing that it is a case of the integrationist view in action.

Importantly, however, though this approach is similar to Heidegger's in its indirect nature, it also marks a crucial difference between the two: Continuing the philosophical project he started on in *The Structure of Behavior*, Merleau-Ponty develops his ideas through extensive engagement with empirical and scientific matters. Part of my argument in A4 is that the enactive-phenomenological concept of nature should be seen as emerging from this kind of indirect, interpretative engagement of the phenomenological perspective with the sciences of life and mind.

6.7 Essence, facticity, structure

The integration of the phenomenological and the empirical involved here can be made clearer by considering another implication of Merleau-Ponty's conception of phenomenology, which has to do with the *status* of phenomenological claims; specifically, the notion of essence and the form of *apriority* and necessity it involves. Merleau-Ponty, that is, claims that the phenomenological approach entails "a new definition of the *a priori*" – one that does not conceive of the *a priori in opposition to* or as belonging to a different level of truth than the *a posteriori* (2012: 229). He makes this point by highlighting what he sees as an inconsistency in Kant's philosophy:

> If the *a priori* maintains its character in Kant's philosophy of *that which ought to be the case*, in opposition to what exists in fact and as an anthropological determination, this is merely to the extent that he has not followed his own program to its logical conclusion, for he set out to define our powers of knowledge through our factual condition and that should have obliged him to place every conceivable being against the background of this factual world. (ibid.; orig. emphasis)

In other words, if experience is recognized as the only adequate starting point for philosophical reflection, and experience further is understood as the inseparable involvement of a subject in a factual world, then any attempt to distinguish, within experience, structures that are in principle *independent* from the world's factual existence will be an unwarranted abstraction. An abstraction, that is, which separates what *should be* (in Kant's case, the subjective conditions for the possibility of experience) from what *is* (the factual content of and empirical

conditions for experience) and thus forgets that the former is only conceivable as realized in and through the latter.

Though Merleau-Ponty phrases this as a phenomenological critique of Kant, it might also be seen as an implicit existential-phenomenological critique of certain tendencies in Husserl's phenomenology. For, as we have seen above, Husserl is quite eager to separate the phenomenological domain from the domain of facts. Phenomenology, he frequently insists, is the study of *pure essences* understood as the invariant structures for the pure *possibility* of types of experiential manifestation, independent of the factual characteristics of any particular experience. In *Cartesian Meditations*, moreover, Husserl describes phenomenology as an "a priori science" that "prescribes rules a priori for actualities" (1931/1973: 28) and claims that the eidetic universality discovered by phenomenology has "the value of an unbreakable law" (1931/1973: 71) – statements that, by talking of "rules" and "law," undoubtedly appear similar to the position Merleau-Ponty ascribes to Kant above. Merleau-Ponty appears to acknowledge as much in one of his later texts, where he admits that he is "pushing Husserl further than he wished to go himself" when he makes the point that "[i]t follows on principle from Husserl's point of departure and from what he proposed to do – namely, to show that this knowledge of essences is altogether experiential, […] that in the last analysis the essence is just as contingent as the fact" (1964a: 72). Thus, insofar as Husserl construes the essential as separate from the factual, Merleau-Ponty's point seems to be that he too, like Kant, has failed to follow "his own program to its logical conclusion."

We are here homing in on a key element in Merleau-Ponty's project of integrating transcendental philosophy with the phenomenon of the real. As he sees it, phenomenology delivers this kind of integration by establishing the *a priori* and necessary structures of experience not as primary to or distinct from the appearance of factual reality, but precisely as *integrated* with it: as structures of actual, world-involving forms of existence, their essence depends on and *involves* the contingent conditions through which they manifest. Thus, Merleau-Ponty says, "[t]he unity of the senses, which was taken as an *a priori* truth, is no longer anything but the formal expression of a fundamental contingency: the fact that we are in the world," and, conversely, "[t]he diversity of the senses, which was taken as an *a posteriori* given, […] appears as necessary to that world" and "thus becomes an *a priori* truth" (2012: 229). In other words, although it is essential to the possibility of experiencing the world in the way we do that the various senses work together to give us a unified experience of the world, this unity is simultaneously a fact contingent upon our actual way of existing in the world. And although it is an empirical, contingent fact that the human organism is gifted with the set of

different senses that it is, these senses are *necessary* for the form of experience characteristic of our human being-in-the-world. The same holds for every aspect of our human mode of existence: "It is impossible to distinguish in the total being of man a bodily organization that one could treat as a contingent fact and other predicates that necessarily belong to him" (ibid.: 174). All the factual – e.g., physical, biological, historical – conditions that subtend our existence are necessary for it in the sense that it would not be what it is without them, and they are also contingent because there is no abstract principle nor pre-given essence that assures them actually obtaining.[68]

In the previous paragraph I repeat some points I also make in A1, in the context of critiquing Gardner's – in my view – too traditional transcendentalist reading of Merleau-Ponty. Briefly, where Gardner argues that there is an absolute distinction between the transcendental, as pertaining to *a priori* and necessary structures, and empirical and factual matters, I claim, with Merleau-Ponty, that they should rather be seen as *integrated*.

From this perspective, then, the transcendental structures of consciousness – i.e., the structures identified by phenomenology as constitutive of the experiential manifestation of the world – have the status of *forms of organization* of contingent, factual existence. From a Husserlian point of view, this might seem like a betrayal of the transcendental-phenomenological project and a relapse into a version of the psychologism or naturalism that Husserl wanted to avoid, where the validity of phenomena is reduced to factors external to their meaningful manifestation. That is, if the 'necessary' structures of consciousness are inherently contingent, then are we not faced with a relativization of all meaning and validity? We can ease this worry by recognizing that the relation between essence and facticity advocated here is not a reductive but rather a *Gestaltist* one. Essences, that is, are neither abstract entities detachable from the factual world nor impotent epiphenomena reducible to external facts, but rather the holistic and internally meaningful organization of forms of existence, or *structures of behavior*.

This solution would probably not have impressed Husserl. In his view, Gestalt psychology was just as committed to psychologism as the atomistic psychology it sought to replace (e.g., 1931/1973: 38). For Merleau-Ponty, however, Husserl is by this exemplifying the regrettable fact that "[m]ost of the time phenomenologists have not understood what might be basically convergent with their own inspiration in contemporary psychology" (1964a: 45). Sure, there are parts of Gestalt theory that ought to be rejected from a phenomenological

[68] For more thorough discussions of Merleau-Ponty's unorthodox approach to these topics, see, e.g., Dillon (1987), Hall (1979), Inkpin (2016), and Shahid (2022).

standpoint, as we saw in Merleau-Ponty's critique of Koffka's physicalism above. But, Merleau-Ponty argues, if we look directly at what the Gestalt psychologists are saying about consciousness and structures of behavior,

> [w]e may then see that they are calling our attention at this level, not to events that are completely external to each other, but to an internal organization which makes the notions of value and meaning come to life. This is enough to show that the Gestalt theory is not merely a new variety of psychologism. […] I believe that to give weight to his eidetic intuition and to distinguish it sharply from verbal concepts, Husserl was really seeking, largely unknown to himself, a notion like that of the Gestaltists – the notion of an order of meaning which does not result from the application of spiritual activity to an external matter. It is, rather, a spontaneous organization beyond the distinction between activity and passivity, of which the visible patterns of experience are the symbol. […] It is […] an earthy and aboriginal sense, which constitutes itself by an organization of the so-called elements. (ibid.: 77)[69]

If, in other words, we want to ground the notion of essence in something beyond the merely verbal or subjective while at the same time not dissolving it into a meaningless nature thought to exist '*partes extra partes,*' then the Gestaltist idea of intrinsically meaningful part-whole organizations emerging from *within* sensible nature is the way to go. Thus, whereas the phenomenological perspective, as Merleau-Ponty argued in *The Structure of Behavior*, is needed for the notion of Gestalt to overcome the antinomy of realism and transcendentalism, we now see that this notion in turn can help ground phenomenological insights in existence.

These considerations are crucial for understanding the view of enactive phenomenology that I'm advocating in this thesis. Phenomenology, on this view, offers a way to identify and describe consciousness and its phenomena at the level of their meaningful constitution, and the enactivist theory of autonomy – which can be seen as a modern, more biologically and mathematically elaborated relative of Gestalt theory – serves to make sense of the structures accounted for by phenomenology as emergent, natural phenomena.

6.8 Phenomenology and psychology

The above reflections on the relations between essences and facticity, and the significance of Gestalt psychology for phenomenology, can also help us understand Merleau-Ponty's view of the relation between phenomenology and psychology. In short, if the essential is integrated

[69] See also Merleau-Ponty (1945/2012: 60).

with the factual in the way we have seen, then knowledge of the factual and empirical conditions for consciousness must contain a dimension of essential or eidetic insight. In Merleau-Ponty's words, "all sound knowledge of facts" – even in "the most experimental type of psychological research" – "must include, at least implicitly, some insight into essences" (1964a: 66).

Merleau-Ponty is here taking issue with a view of the division of labor between phenomenology and psychology that he finds present in some of Husserl's writings. This is the view that phenomenology, in the role of eidetic or phenomenological psychology, by itself is able to determine "the basic categories of psychic life" so that psychology in the narrower, empirical sense is "limited to a mere study of details" (ibid.: 65) – limited, that is, "to study certain empirical curiosities within the frames that are furnished by phenomenology" (ibid.: 66).[70] In other words, phenomenology on this view plays the role of 'ontological dictator' over the realm of psychology, and empirical psychology can never contribute anything more than elements of the non-essential, factual *content* of the *forms* already specified through pure phenomenological reflection. If, however, the integration of the factual and the essential is acknowledged, then the question of the division of labor between eidetic/phenomenological and empirical psychology becomes, in Merleau-Ponty's words, "extremely difficult" (ibid.: 66). For on this view, content and form cannot be separated – empirical facts are not mere details but are *constitutive* of the form or essence, and to know such facts properly will involve knowing them in connection both to other particular facts and to the whole phenomenon of which they single out aspects, making the knowledge an instance of essential insight.

A key element of this view is the idea that phenomenology's eidetic method and the scientific method of induction are actually more similar than they might seem at first glance.[71] In short, the idea is that induction too is a procedure for arriving at knowledge of essential features common to a range of particular phenomena, and as such involves a form of eidetic intuition (ibid.: 68-70). The phenomenologist might be more concerned with imaginatively surveying the scope of *possible* variations of the phenomena under study, whereas the empirical scientist pays more attention to the *actual* variations that have been and can be observed, but this is not enough of a difference to delegate the insights thus gained to separate domains of truth. As Merleau-Ponty puts it in "The Primacy of Perception,"

[70] Ramstead (2015) presents Husserl in this way, and seems to subscribe this view himself.
[71] See Romdenh-Romluc (2018) for an elaboration of this feature of Merleau-Ponty's philosophy.

> there are not two truths; there is not an inductive psychology and an intuitive philosophy. Psychological induction is never more than the methodological means of bringing to light a certain typical behavior, and if induction includes intuition, conversely intuition does not occur in empty space. It exercises itself on the facts, on the material, on the phenomena brought to light by scientific research. There are not two kinds of knowledge, but two different degrees of clarification of the same knowledge. Psychology and philosophy are nourished by the same phenomena […]. (1964c: 24)

Phenomenology and psychology are integrated as approaches to the same phenomena. Psychology, like phenomenology, aims to illuminate essences of phenomena, and phenomenology, like psychology, has its point of departure in the factual world. And, while psychology will benefit from having its concepts clarified through phenomenology's eidetic investigations, these investigations will in turn not be adequate unless they are informed by the eidetic insights provided by empirical psychology.

Merleau-Ponty uses this line of reasoning to justify the phenomenological value he ascribes to the notion of Gestalt. "If," he says, "the notion of Gestalt helps us to understand many facts and is fruitful in the empirical order, it must have some phenomenological truth and must have something to contribute to phenomenology" (1964a: 77). In other words, one of the reasons why phenomenology should let itself be informed by the notion of Gestalt is that it has proven useful in the domain of (empirical) psychology – an indication that it has achieved a form of essential insight. More generally, these considerations also put us in position to better understand the central place Merleau-Ponty gives to empirical science – e.g., the above-mentioned studies of psychological pathology – throughout his philosophical career.

In this and the two previous sections, we have seen how Merleau-Ponty construes phenomenology as a philosophy of existence that sees essence and facticity as integrated in the form of Gestalt phenomena, and which does not recognize a clear-cut division of labor between phenomenology and psychology. This is significant, first, because we have thus seen how Merleau-Ponty's phenomenology is developed in continuity with, and as an expansion and refinement of, the ontology of structure he laid out in *The Structure of Behavior*. And secondly, because we by this have arrived at the concept of phenomenology I see as involved in the project of enactive phenomenology. On this view, phenomenology is understood as a reflection, not on a domain of pure consciousness exclusively available to the phenomenologist, but on structures of existence grounded in the natural world and available to a multitude of perspectives, requiring what enactivists call a process of *mutual illumination* (Varela et al., 1991: 15) or *mutual enlightenment* (Gallagher, 1997) in order to be properly

grasped. This, then, is the proper framework for understanding the role for phenomenology that I explore in A2's discussion of the nature of perception. It can still, as we determined earlier (5.5), be called an instance of phenomenological psychology, but *what this means* has now been enriched in light of the idea of structures as existential integrations of essence and facticity. The same idea underlies A1's case for an 'integrationist view' as well as A4's proposal to see the enactive-phenomenological concept of nature as emerging through a dialectical integration of phenomenological and scientific perspectives.

Now, Husserlians might still worry that we have here simply abandoned transcendental phenomenology in favor of a form of philosophical psychology or anthropology. It is not, the objection might go, consciousness as the always presupposed field of knowledge, meaning, and objectivity that is the target of the phenomenology we have considered here, but rather consciousness – and human existence more generally – as a phenomenon that appears *within* the natural attitude. And indeed, when we in the last couple of pages have looked at Merleau-Ponty's view of the relation between phenomenology and psychology, phenomenology was explicitly defined as eidetic or phenomenological *psychology* – i.e., the enterprise Husserl saw as the non-transcendental *parallel* to transcendental phenomenology. In light of the considerations from the last sections, however, the distinction between the transcendental and empirical subject – understood as the subject matter of transcendental phenomenology and phenomenological psychology, respectively – has become even less clear than it was for Husserl. Without denying that there are philosophical (epistemological, logical, ethical, etc.) questions that might not be directly relevant for the science of psychology, and which cannot be decided by empirical-psychological means, and, conversely, that there are facts about the human psyche that might not be of much interest to the philosopher or transcendental phenomenologist, the picture we have landed on here is that the transcendental and empirical domains nonetheless *are not separate but integrated in the structures of existence.*

To get an even clearer view of this picture, let's end this chapter with a brief look at Merleau-Ponty's take on the significance of embodiment and intersubjectivity for the notion of subjectivity.

6.9 Embodied and intersubjective existence

In our exploration of Husserl's phenomenology above, we saw that his reflections on the significance of embodiment and intersubjectivity (5.6) seemed to indicate a view of consciousness as an inseparable integration of transcendental and empirical, and subjective and

objective aspects. Merleau-Ponty accepts and builds upon many of Husserl's ideas on these topics, but they take on a somewhat different significance in his project. In short, if Husserl's reflections *indicate* and *hint toward* a view of consciousness as an ambiguous, bodily integration of subjective and objective aspects, Merleau-Ponty explicitly *embraces* this view and puts it center stage in his existential-phenomenological redefinition of transcendental philosophy.

Many of the core ideas of Merleau-Ponty's phenomenology of embodiment can be found already in the parts of Husserl we visited above, and it is thus not necessary to repeat them in detail here.[72] Some elements do however deserve mentioning. First, a crucial notion in Merleau-Ponty's phenomenology of embodiment is that of *motor intentionality* – the bodily, action-oriented form of intentionality that Merleau-Ponty sees as the foundational form of consciousness (ibid.: 113, 139). The notion of motor intentionality can be seen as an elaboration of Husserl's idea of the 'I can', which we encountered above. Motor intentionality, Merleau-Ponty says, expresses the fact that "[c]onsciousness is originally not an 'I think that,' but rather an 'I can'" (ibid.). Next, the notion of *body schema* denotes our unified, holistic way of being bodily oriented in our surroundings (ibid.: 100-102). In reaching for a cup of coffee on the table, for instance, it is not just my right arm and hand that are activated. My whole posture and point of balance are modified according to the motor-intention of grasping the cup, making the movements of my right arm and hand *parts* of a whole-body achievement. As such, the phenomenon of body schema is directly linked to the view of consciousness as a structure of behavior. The part-whole relationship that constitutes the body schema, Merleau-Ponty says, makes it "a 'form' in Gestalt psychology's sense of the word" (ibid.: 102). Further, and crucially, the notion of the body entailed here, as a being animated and organized according to a body schema, is not that of a body occupying space as an *object* among other objects. Rather, it is a body-*subject*, the parts of which are integrated "according to their value for the organism's projects," making its spatiality not merely *positional* but *situational* (ibid.). In other words, the body schema constitutes the body as *Leib*, a *living* and *lived* body that discloses its surroundings as imbued with value and sense in light of its own projects.

As said, Merleau-Ponty explicitly embraces the ambiguous notion of subjectivity that results from recognizing its embodied nature. The body, he says, forms "a third genre of being between the pure subject and the object" (ibid.: 366). It is not a mere object, because it is

[72] I'm thinking especially of the constitutive role of kinesthesia for perception, and the touching-touched duality involved in bodily subjectivity.

situated in and directed towards a field of value and meaning. And it is not a pure subject, because, as embodied existence, it is not transparent to itself but is constituted by structures and processes not directly available for its own self-reflections.

We can understand this in light of Merleau-Ponty's view of the significance of intersubjectivity for human existence – a topic that is central to A2's discussion of the relevance of observable *behavior* for phenomenological accounts of mental phenomena. In short, as embodied subjects, our essence is not exhausted by our being *for ourselves*, our presence to ourselves as subjects, but also includes our being *for others*, our bodily presence in the intersubjectively constituted lifeworld: "I must be my exterior, and the other's body must be the other person himself. […] my existence must never reduce itself to the consciousness that I have of existing; it must in fact encompass the consciousness that *one* might have of it" (Merleau-Ponty, 1945/2012: lxxvi; orig. emphasis). This idea is largely overlapping with Husserl's idea of the intersubjectively constituted subject that we encountered above. For Husserl, remember, to be a subject seemed, in the last instance, to entail being an experienceable structure in the intersubjectively shared lifeworld. Merleau-Ponty thinks along the same lines but is more unequivocal in positing this 'impure,' experienceable subjectivity as the primordial form of conscious existence. Moreover, he explicitly connects the intersubjective manifestation of subjectivity to the notion of Gestalt. When we follow the Gestaltists in rejecting the idea of pure, atomistic sensations, Merleau-Ponty says, we become able to recognize that other minds are directly given to us in experience as "whole[s] impregnated with an immanent signification," where, that is, what is immediately presented to us is "the sense, the structure, and the spontaneous arrangement of parts" (ibid.: 58). In other words, the mental life of others manifests directly to us, in our intersubjectively shared lifeworld, in the form of structures of behavior.[73]

A crucial point here is that, according to Merleau-Ponty, this does not only hold for the givenness of *others* in our experience, but also for how each of us is present to *ourselves*: "My own 'psyche,'" he continues the just-cited passage, "is not given to me in any other way" (ibid.). Thus, our self-reflections and self-experiences are reflections upon and experiences of a holistically organized structure of existence inhabiting an intersubjective lifeworld. And, just like we, as the lived perspective of our own existence, have access to aspects of our experiential life not directly visible to others, so there are aspects of our existence that exceed our direct

[73] See Gallagher (e.g., 2005; 2007; 2020) for a contemporary elaboration of Merleau-Ponty's theory of direct social perception.

grasp and are more readily available to the gaze of others. As structures of behavior, we are reducible to neither of these types of aspects but must rather be seen as their holistic integration.

This, again, leads us to the view of consciousness as an integration of the subjective and objective, and the transcendental and the empirical. "If," as Merleau-Ponty says,

> the transcendental is intersubjectivity, how can the borders of the transcendental and the empirical help becoming indistinct? For along with the other person, all the other person sees of me – all my facticity – is reintegrated into subjectivity, or at least posited as an indispensable element of its definition. (1964b: 107)[74]

Here we again encounter the idea of the interweaving of essence and facticity: The essence of subjectivity, Merleau-Ponty's thought goes, must be understood as an integration of the factual and empirically observable conditions for our mode of existence.

This, then, is Merleau-Ponty's idea of embodied subjectivity: a holistic structure of behavior that unifies and integrates its factual conditions in a body schema intentionally oriented in a world that matters to its existence as such, and in that way enacts itself as *sense*, a meaning-exhibiting phenomenon of the lifeworld. A lot could be said about the different dimensions that are involved in the constitution of this embodied structure of existence. One thing that is important to note, is that this view of embodied subjectivity involves a unification of the physiological and psychological aspects of our being: our physiological body is animated and organized by, and is an essential part of, the motor-intentional, value-disclosing orientation in the world that primordially characterizes our psychological life (Merleau-Ponty, 1945/2012: 90). This primordial intentionality, moreover, is constituted by biological/vital dimensions – desire, sexuality, affectivity – as much as social, ideological, and epistemic dimensions; or, more precisely, it integrates all of these dimensions, so that, even though there are situations where some of them are more pronounced than others, none are ever completely absent from the arrangement of our perceptual and existential field (ibid.: 137, 160, 162).

A last point that deserves mentioning is the significance of temporality in this picture of embodied subjectivity. Like Husserl, Merleau-Ponty recognizes that the unity of consciousness, at its core, is a *temporal* unity – an interweaving of past, present, and future that gives the flow of consciousness, with its subject- and object-poles, a sense of coherence through time. Indeed, Merleau-Ponty goes as far as to say that the subject *is* time (ibid.: 445). By this he means to make the point that neither the temporal flow of experience, nor its unitary

[74] I quote the same passage in A2, in connection with the aforementioned argument regarding the significance of observable behavior for phenomenology.

organization, are results of the activity of a pre-given subject, but that the subject on the contrary is *nothing* without its temporal unfolding, and that this unfolding is beyond the subject's own control: "I am not the author of time, any more than am I the author of my own heartbeats, nor am I the one who takes the initiative of temporalization; I did not choose to be born, but no matter what I do, once I am born, time flows through me" (ibid.: 451). Employing a notion from Husserl's phenomenology (e.g., 1931/1973: 78-79), Merleau-Ponty argues that the primordial temporal organization of consciousness is a case of *passive synthesis* (1945/2012: 451) where the unity of consciousness is constituted by its ways of being pre-reflectively *affected* by the situations it encounters. The significance of affectivity and its connection to temporality plays a central role in A2. I there argue that the affective dimension of perception, as revealed phenomenologically, supports the enactivist view – *pace* Degenaar and O'Regan's (2017) sensorimotor theory – that the *living* body is constitutively necessary for perceptual subjectivity.

Regarding the latter point, it is interesting to note that Merleau-Ponty's idea of the subject as time, which is explicitly put forth as a critique of Kant-style intellectualist theories of the temporal unity of consciousness, also can be read as involving an implicit critique of certain elements in Husserl's phenomenology of the consciousness of internal time (Kelly, 2015; Morris, 2018: 107). The idea, in short, is that Merleau-Ponty goes further than Husserl by establishing temporality as an *ontological* structure that can, ultimately, be understood as the dynamic emergence of sense and subjectivity from within pre-subjective *nature*.

Thus conceived, subjectivity, as an embodied structure of behavior, would truly be integrated with the phenomenon of the real, being construed as an expression of the dynamic self-organization of natural processes. This is the view of subjectivity that is advocated by the enactive approach. It is therefore perhaps no coincidence that *Phenomenology of Perception*'s chapter on temporality is where enactivists find the quote that has become something of a catchphrase definition of their idea of *enaction* as a co-specification of the cognitive agent and its world.[75] Making the point that the subject, as time, is constituted by the ways it is affected by its past, present, and (in a protentional, anticipatory sense) future situations of facticity, and that it is these processes of affectivity that in turn endow these situations with value and sense for the subject, Merleau-Ponty states that "[t]he 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

[75] Quoted by Varela et al. (1991: 4), Thompson (2007: 247), and Di Paolo (2018: 71), among others. (This footnote also appears in A4.)

world, but from a world that it itself projects" (1945/2012: 454). The essentially relational nature of subjectivity that Merleau-Ponty articulates here can be seen as a version of the Husserlian view of intentionality as a correlational structure, only that this structure is now conceptualized as a dynamic process of existential *becoming*.

6.10 Summary

This chapter has explored some key elements from Merleau-Ponty's early philosophy that I see as especially important for understanding the phenomenological dimension of the enactive approach. The exploration was framed by the previous chapter's outline of Husserl's phenomenology, and we have seen how Merleau-Ponty builds on core insights from his predecessor while also taking the phenomenological movement in new directions.

We started by noting the task Merleau-Ponty sets for himself in the introduction to *The Structure of Behavior*, of understanding "the relations of consciousness and nature" (1942/1963: 3). Arguing that the notion of Gestalt is better suited for this job than atomistic and other reductionist approaches, he was eventually led to the problem of the ontological status of Gestalts where he, by reflecting on the transcendental status of consciousness, encountered a situation reminiscent of what Husserl called the paradox of subjectivity. Proposing phenomenology as the philosophical approach best suited to overcome the antinomy of transcendentalism and realism, Merleau-Ponty ended *The Structure of Behavior* by suggesting that the notion of Gestalt is applicable to consciousness not only as it manifests empirically, but also in its transcendental function, and concluded with a call to further redefine transcendental philosophy along these lines, so as to "integrate with it the very phenomenon of the real" (ibid.: 224).

In the last four sections, we have seen how Merleau-Ponty, in *Phenomenology of Perception* and a couple of other texts, develops his conception of phenomenology in response to this call. Key in this development is his construal of phenomenology as existential philosophy, his integration of essence and facticity and consequently of phenomenology and psychology, and his notion of embodied subjectivity as a structure of existence that integrates subjective and objective, and empirical and transcendental aspects, and which emerges from the dynamic self-organization of pre-subjective nature. With this, the core methodological and ontological features of enactive phenomenology have been established.

7
Enactive phenomenology
Context and foundational components

In the previous chapters, we have seen phenomenology develop from Brentano's proto-phenomenological descriptive psychology, via Husserl's phenomenology, to Merleau-Ponty's ontology of structure. Throughout, the focus has been on the foundational issues presented in the introduction (1.1).[76] Having thus established some of the core tenets of the branch of the phenomenological movement most relevant to the enactive approach, the purpose of this last chapter is to give a clearer idea of how these figure in the enactive project. Since phenomenology's role in enactivism is the main topic of this dissertation, it means that we are here entering a territory that is already largely covered by the four articles. To avoid unnecessary overlap and repetitions, the points I make in the following are therefore limited in scope compared to the more extensive elaborations of the two foregoing chapters. I will, for instance, refrain from saying much about the theoretical details of the enactive approach, apart from those that concern the significance of phenomenology specifically.[77]

The book that launched the enactive approach described its project as "a modern continuation" of Merleau-Ponty's research (Varela et al., 1991: xv). And indeed, most of the conclusions arrived at in the previous chapter are accepted and further developed in enactive phenomenology. At the same time, the historical and intellectual situation in which the enactive approach operates is, as the same authors note, "significantly different" from Merleau-Ponty's (ibid.: xvi). In short, whereas he worked in a context where the mind sciences were still "fragmented into disparate, noncommunicating disciplines," enactivism finds itself within "the interdisciplinary matrix called *cognitive science*" (ibid.; my emphasis). In what follows, I'll first give a brief presentation of this new context and enactivism's place in it (7.1), before outlining some of the core elements of enactive phenomenology: first by considering the significance of phenomenology in enactivists' approach to the mind-body problem (7.2), then

[76] To repeat, the issues laid out there were those of the foundations of psychology and the relation between philosophy and psychology, and more specifically those pertaining to phenomenology as a foundation for psychology, the relation between phenomenology and naturalism and between transcendental and psychological phenomenology, the phenomenological concepts of mind and nature, and the idea of a mutual illumination between phenomenology and the sciences of mind.
[77] My most thorough presentation of enactive theory can be found in the A2, where I, among other things, offer clarifications of the notion of enaction, the enactive mind-life continuity thesis, and the notion of adaptive autonomy. In A4 I go into detail about the enactivist concept of nature.

by exploring some of the complexity involved in the enactive idea of mutual illumination (7.3), and lastly by taking a closer look at the sense in which enactive phenomenology is a *naturalized* phenomenology (7.4).

7.1 Cognitive science, cognitivism, and the enactive approach

When we in the last chapters have talked about phenomenology's relation to psychology, 'psychology' has mainly referred to theories and research from the early years of psychological science, from the late 1800s to the 1930s. Enactive phenomenology must however be understood in light of more recent developments in the sciences of the mind. Of special importance here is the emergence of *cognitive science* in the mid-1900s. Following the broad definition of psychology that I've employed throughout this introductory essay, where it encompasses all scientific approaches to the mind, cognitive science is a field of research *within* psychological science. This categorization must however not let us ignore the interdisciplinarity at the heart of cognitive science: on a narrower and more common definition of psychology[78], psychological perspectives make out one part of cognitive science, together with contributions from fields such as philosophy, linguistics, computer science (AI), anthropology, and neuroscience.

When cognitive science first emerged, it defined itself in contrast to the behaviorist tendencies in psychology that had been prevalent in the first half of the 1900s. In short, where behaviorism attempted to reduce the workings of the mind to stimulus-response relations displayed in externally observable behavior, cognitive scientists argued that we also need to appeal to processes internal to the cognitive system in order to understand cognition. In its first decades, this general approach of cognitive science was dominated by a set of more specific features, which, following Howard Gardner (1987: 6-7), can be summarized as follows: First, there is the idea that human cognition must be understood in terms of *mental representations* – i.e., internal, symbolic entities that stand for external objects and states of affairs, and that cannot be reduced to purely neuronal or behavioral factors but requires its own level of analysis. Secondly, there is the conviction that the functioning of the human mind is best conceived as *modeled on the computer*, which here means that cognition should be seen as a form of logically structured information processing that mediates between stimuli (input) and behavior

[78] As, for instance, what is taught and researched at departments of psychology in academic institutions.

(output).[79] Third, the first cognitive scientists deliberately chose to "de-emphasize" (ibid.: 6) the significance for cognition of affective, emotional, historical, and cultural factors, as well as of the background context for actions and thoughts. Fourth, and as already mentioned, cognitive science seeks an interdisciplinary illumination of the workings of the mind. Lastly and, according to Gardner, "somewhat more controversial" (ibid.: 7), is the claim that cognitive science to a large degree is driven by epistemological issues and concerns central to the Western tradition of philosophy.

Many things have changed in cognitive science since the publication of Gardner's book. Once enjoying the status of something close to a core consensus of cognitive science, many of the features he lists - particularly the first three – are nowadays associated with the position called *cognitivism* or *computationalism*. In its original form, cognitivism is arguably more or less outdated, and, faced with the rapid rise of competing options over the last decades, updated versions of cognitivism have not managed to maintain the hegemonical status of their predecessor.

The enactive approach is one of those options. Launched with the publication of *The Embodied Mind* (Varela et al., 1991), it forms part of a broader wave in cognitive science – the 'embodied turn' or '4EA cognition'[80] – that over the last three decades or so has sought to either reject or strongly modify many of the core tenets of cognitivism.[81]

In enactivism specifically, the idea that cognition is a process operating on internal representations is replaced by a view of cognition as *enaction* and *sense-making* – a dynamic, relational, and bodily process whereby the cognitive agent and its environment co-emerge as poles of one unified structure. The mind, in short, is here not seen as an internal domain *separate from* and in need of *representing* the external world, but rather as a relational field already *involving* the world as a field for bodily activity. Further, regarding the second of Gardner's points, enactivists reject the computer model of the mind in favor of a *biological* model. On this view, the mind is characterized by the same general organizational properties –

[79] In keeping with the quasi-historical focus of this introductory essay, I feel obliged to note that it of course is no coincidence that cognitive science, centered on this idea, was born in the immediate wake of the explosion of computer technology that followed the second world war.
[80] The four Es stand for 'embodied,' 'enactive,' 'extended' and 'embedded,' and the A – which is not always added – for 'affective'. See Newen et al. (2018) for a general introduction.
[81] It is common to distinguish between three main categories of theories in cognitive science: cognitivism, connectionism, and embodied dynamicism, with enactivism as a version of the latter (Roy et al., 1999: 5; Thompson, 2007, pp. 4-13). From an enactivist perspective, connectionism – with its employment of non-linear dynamical systems models and rejection of the cognitivist idea of cognition as rule manipulation of discrete symbols – represents a step in the right direction, but is still too caught up in representationalist and computationalist thinking.

adaptive autonomy, in enactivist terms (Di Paolo and Thompson, 2014) – that also define the self-organizational form of existence of living organisms. When it comes to the third feature listed by Gardner, the enactive approach involves *re-emphasizing* the significance of the background context, affectivity, emotions, culture, and history for cognition. In short, whereas the main focus of traditional cognitivism has been the phenomenon of explicit, conceptual thought, enactivists draw attention to how cognition more primordially involves a pre-reflective world-involvement, shaped by bodily, affective, and intersubjective factors, that serves as an always presupposed background for our more intellectual activities.

From the enactive perspective, the necessity of an interdisciplinary approach to cognition is probably the least controversial of the features Gardner mentions. If there is a contrast with traditional cognitivism here, it is that enactivists expand the scope of disciplines relevant for understanding the mind. The perhaps most significant additions include theoretical biology and the mathematics of complex and dynamical systems, both of which are connected to the enactive notion of adaptive autonomy. And, although phenomenology is not a discipline in its own right, its inclusion in enactivist theory represents a significant expansion of the *kind* of philosophy recognized as relevant for cognitive science. Lastly, enactivism maintains the concern with epistemological issues central to Western philosophy in the sense that questions about the nature and sources of knowledge, the relations between mind and world, etc. are among its topics of interest. At the same time, however, a central claim of enactivism in this context is that much of Western philosophy, with Descartes as the paradigmatic example, has employed an inadequate schema for thinking about these issues – one that places too much emphasis on explicit, intellectual knowledge and, perhaps for that reason, presupposes an initial gap between mind and world that must be bridged by representations. One of the vices of cognitivism, from the enactivist perspective, is that it is too entrenched in this part of the Western philosophical tradition.

Many of these features of enactivism can be seen as expressions of its link to phenomenological philosophy. As we have seen, the idea of the mind as a relational, embodied, and affectively and intersubjectively situated structure, and the corresponding rejection of Cartesian and other intellectualist views, are key components of both Husserl's and – especially – Merleau-Ponty's phenomenology. We have also seen how the latter's view of human consciousness as a structure of behavior emerging as a reorganization of physical and vital structures, together with Hans Jonas' existential biology, prefigures the biological model of the mind espoused by enactivists.

In the next sections, I'll look closer at some of the connections between enactivism and phenomenology. For those sections to be read in the right light, however, it is necessary first to make a few clarificatory remarks. First, although I focus on the significance of phenomenology for enactivism, my claim is not that the emergence of enactive theory can be understood solely in light of the phenomenological movement. Many additional sources of inspiration could be mentioned. To take only one example, the enactive notion of autonomy is significantly indebted to the theory of *autopoiesis* proposed by Maturana and Varela (1972/1980) – a work in theoretical biology that draws on resources from second-order cybernetics. Secondly, enactivists were not the first to level a phenomenological critique of cognitivism and computationalism. Most significantly, when *The Embodied Mind* was published in 1991, Hubert Dreyfus' (1972/1992) Heidegger- and Merleau-Ponty-based lamenting of the intellectualism and Cartesianism inherent in the computer model of the mind had already been well-known for almost two decades.[82] Agreeing with many of his negative points, enactivism goes beyond Dreyfus' project by being a more systematic and interdisciplinarily founded proposal for an alternative, non-cognitivist paradigm in cognitive science. Lastly, enactivism is far from the only approach in contemporary cognitive science that draws on resources from phenomenological philosophy. On the contrary, phenomenology – especially that of Merleau-Ponty and Heidegger – is a source of inspiration for many of the approaches included under the embodied/4E umbrella.[83] However, there are arguably few – if any – approaches that draw as heavily from phenomenological perspectives as enactivism. All of the dissertation's articles point to various aspects of this central significance of phenomenology for the enactive approach. Below I'll draw attention to some more general elements of enactive phenomenology.

7.2 The significance of experience and the body-body problem

Enactivism's connection to phenomenology is rooted in the convictions that cognitive science needs to be able to do justice to and account for the *lived* character of being a conscious, human mind (in short, *experience*), and that phenomenological philosophy represents the most

[82] The authors of *The Embodied Mind* themselves mention Dreyfus as a long serving "Heideggerian gadfly" to cognitive science (Varela et al., 1991: lxii).
[83] For some notable examples that are deeply inspired by phenomenological insights and yet have important points of conflict with the enactive view, see e.g., McClamrock (1995), Clark (1997), and Wheeler (2005).

promising approach to study this dimension of mentality, at least within the Western intellectual tradition.[84]

In order to establish the significance of phenomenology for cognitive science, enactivists use two arguments that should be familiar to us by now. First, they argue that many of the phenomena cognitive science seeks to account for – perception, thought, imagination, emotions, etc. – are essentially lived, experiential phenomena. It is, in other words, in our lived experiences that these phenomena are primarily revealed as *what they are*, and cognitive science thus requires a phenomenological account of them in order to know *what* it is studying (Thompson, 2007: 13). This, of course, is the same idea that we've seen advocated by Brentano, Husserl, and Merleau-Ponty in the previous chapters; namely, that empirical psychology needs to be supplemented by a *descriptive* or *eidetic*/*phenomenological* psychology. As I've noted before, I explore this role of phenomenology for enactivism most directly in A2's discussion of the nature of perception, though the question of how phenomenology by playing that role is engaged in a process of *mutual illumination* with other scientific perspectives is a driving issue also in A1 and A4 (more on this below). Secondly, they argue that experience is irreducible due to its *transcendental* status (ibid.: 87) – a case we have seen be made by both Husserl and Merleau-Ponty. The idea of the transcendental status of experience is a central theme in two of the articles: In A1 I argue, *pace* Gardner's (2015) transcendentalism, that it can be reconciled with a naturalization of phenomenology within the 'integrationist view,' and in A4 I emphasize its significance for enactivism's rejection of the objectivist concept of nature (more on this too below).

In light of these two arguments, a crucial shortcoming of cognitivism is that it is unable to properly account for experience. That is, the computational processes by which cognitivism defines the mind are posited as entirely subpersonal and nonconscious, with no clear explanation of how such processes relate to the mind's experiential, subjective manifestation (Thompson, 2007: 5). Cognitivism is thus faced with what Thompson, following Ray Jackendoff, calls the "mind-mind problem" (ibid.: 6): in trying to solve the mind-body problem[85] by seeing the brain as accomplishing a non-conscious, *computational* mind, it creates for itself the problem of understanding the relation between the computational and the *phenomenological* mind. Thus conceived, the mind-mind problem is equivalent to what David

[84] *The Embodied Mind* (Varela et al., 1991) also emphasized the relevance of certain parts of Buddhist philosophy for studying human experience, but this perspective has – perhaps regrettably – received very little attention in later enactivist writings.

[85] Or the *psychophysical* problem, as we saw it was called by the first generation of experimental psychologists.

Chalmers famously has dubbed "*the hard problem*: Why is all this processing accompanied by an experienced inner life?" (1996: xii; my emphasis).

The mind-body problem, including Chalmers' hard problem, is typically posed within a Cartesian framework that presupposes a fundamental distinction between the subjective and the objective, consciousness and physical nature. In short, physical nature is conceived as entirely devoid of anything subjective and experiential, and consciousness is seen as an entirely subjective – and hence non-physical – phenomenon. Within this framework, one seems to be faced with the alternatives of either denying the reality of consciousness altogether by holding that the mental is exhausted by the brain's non-conscious information processing, or embracing a form of dualism that sees consciousness as belonging to a distinct, non-physical realm of reality.

The enactive approach involves a rejection of the Cartesian framework. This rejection is in part based on phenomenological reasons. Rather than conceiving of consciousness as a purely subjective, disembodied entity, enactivists follow Merleau-Ponty in seeing it as an *embodied* and *world-involving* form of existence or structure of behavior. And, rather than accepting the objectivist view that physical nature is essentially non-subjective, they follow Merleau-Ponty and Hans Jonas in conceiving of living organisms as emergent, physical structures characterized by forms of immanent, meaningful directedness. This non-objectivist view of nature is a theme that runs through all of the dissertation's articles, in various ways. Within this non-Cartesian framework, Thompson argues, the issue of relating mind and body

> is no longer the contrived one of whether a subjectivist concept of consciousness can be derived from an objectivist concept of the body. Rather, the guiding issue is to understand the emergence of living subjectivity from living being, where living being is understood as already possessed of an interiority that escapes the objectivist picture of nature. (2007: 236)

In this way, the traditional mind-body problem is reconceptualized into what some enactivists have called a *body-body problem* (Hanna and Thompson, 2003; Thompson, 2007: 237); i.e., the problem of relating the *lived* aspects of embodied existence to its *living* aspects. In contrast to the Cartesian notions of the mental and the physical, the notions of the lived and the living body do not denote two distinct ontologies defined in opposition to each other, but rather, as Thompson says, "two types within one typology of embodiment" (ibid.:). These types are not different *things* of which embodied existence is metaphysically composed; they are aspects of the same embodied structure of existence, as disclosed to two different ways of apprehending and analyzing it. And, as we have already seen in our earlier considerations of embodiment and

intersubjectivity, these aspects are not completely separate from each other but are *integrated* in significant ways. It is even somewhat misleading or artificial to talk of only *two* types or aspects here, insofar as the lived-living body is "an open region of investigation and analysis" (ibid.: 236), a multi-aspectual phenomenon that lends itself to a range of different perspectives: Not only do different empirical sciences grasp the body in terms of different (e.g., neurobiological, evolutionary, behavioral, sociological) dimensions of empirical reality – the phenomenological perspective too discloses a diversity of ways that one's own and others' bodies manifest in the lifeworld.[86]

All of this is to say that the body-body problem appears to be a much more tractable issue than the Cartesian mind-body problem.[87] Rather than having before us the impossible challenge of bridging a gap between two by definition unbridgeable concepts, we are here presented with the task of illuminating the nature of and relations between various aspects of embodied existence. One central issue here is to make sense of how the body's biological organization and dynamics contribute to the constitution of a lived perspective on part of the organism. Enactivists aim to deliver on this task with their notion of adaptive autonomy, which makes it possible to see the lived body as an expression of a bodily form of dynamically co-emergent organization of parts and whole, whose processes of sense-making involve the presentation of a phenomenal world (Di Paolo, 2005; Thompson, 2007: 237). The general methodological stance assumed by enactivists here is, as mentioned earlier, what they call a *mutual illumination* between phenomenology and the sciences of mind and life (Varela et al., 1991: 15; Gallagher, 1997). Let's take a closer look at how this idea should be understood.

[86] Citing Natalie Depraz, Thompson (2007: 462n6) mentions a range of different concepts employed by Husserl to describe various manifestations of the body. See Reynolds, (2017, ch. 6), Heinämaa (2018), and Wehrle (2020) for more on different phenomenological concepts of embodiment.
[87] Pollard (2014) argues that enactivists' emphasis on the 'double sense' of embodiment (lived and living) falls prey to the kind of subject-object dualism Merleau-Ponty's notion of the lived body is meant to surpass. The enactivists, he claims, think of the lived body as a subjective feature of the body conceived as a "psycho-physical being" within the natural attitude, obscuring the transcendental significance it has in Merleau-Ponty's works. I find it difficult to accept Pollard's interpretation. On the contrary, if we take our previous reflections on the relation between the transcendental and the empirical into account, I think it might even be possible to accuse Pollard's strict division between the transcendental and the naturalistic for falling prey to a problematic dualism of its own.

7.3 Dimensions of mutual illumination

One of the things I hope this introductory essay shows, is that there is no simple answer to the question, what is phenomenology? Phenomenology is a broad and multifaceted movement of ideas, spanning a diversity of topics, including meta-philosophy, epistemology, ontology, psychology, philosophy of nature, and philosophy of science. For the same reason, there is no simple answer to exactly what role phenomenology plays in the enactive approach. Given the substantial degree of continuity we already have seen holds between enactivism and the phenomenological movement, one could make the case that the former is not simply *informed* by the latter but is *part of* it.[88] As is probably evident from the approach I have chosen for this introductory essay, I think there is something to that idea. Regardless of whether one accepts this view, however, the fact remains that the presence of phenomenology in enactivism is multifaceted. In order to make the nature of this presence clearer, then, distinctions have to be made.

We can start by noting the *foundational philosophical* role we saw phenomenological considerations play for enactivism in the previous section, and which also has been the main focus of this dissertation. This role has three main components: 1) the *epistemological* acknowledgment of the transcendental and irreducible status of experience, 2) the *methodological* conviction that a phenomenological elucidation of experience is needed in the sciences of the mind, and 3) the *ontological* view of the mind as an embodied mode of existence and living beings as intrinsically meaningful and subjective.

In line with the naturalistic and interdisciplinary ambitions of enactivism, this foundational significance of phenomenology cannot be separated from the more concrete ways in which its components are brought to bear in interactions with other scientific perspectives. Here it is possible to distinguish at least a couple of further roles for phenomenology.

First, phenomenology is sometimes employed as a *method for gathering first-personal data.* Here I'm especially thinking about the research programs *experimental neurophenomenology* (Lutz et al, 2002; Cosmelli et al., 2004; Petitmengin et al., 2007) and its close cousin, *micro-phenomenology* (Petitmengin, 2006; Petitmengin et al., 2017). In the former, test subjects are trained in a phenomenology-inspired method which they then use to categorize their own first-person experiences in ways intended to shed more light on the results

[88] Käufer and Chemero (2015: 3) make this claim.

of brain scans done on the same subjects. In the latter, one employs a specific, phenomenology-inspired interview technique in order to generate similar kinds of data for similar purposes.[89]

Importantly, although these research programs are clearly inspired by phenomenological philosophy, claiming, for instance, to make use of methodological elements such as the reduction and eidetic intuition, the 'phenomenological method' of experimental neurophenomenology and micro-phenomenology is hardly *identical* with that of philosophical phenomenologizing. Much could be said about this, but I'll let two brief comments suffice. First, the philosophical project of illuminating the essential and constitutive structures of the consciousness-world correlation seems to be quite different from experimental neurophenomenology's goal of collecting information about such things as, for instance, "the degree of preparation felt" by the subjects when performing certain tasks (Lutz, 2002: 143). Second, insofar as experimental neurophenomenology and micro-phenomenology proceed by delineating experience, defined by its 'first-personal' as opposed to 'third-personal' qualities, as an object among other objects open to scientific study, one can hardly say that a suspension of the natural attitude has been executed.[90] This is not to say that the results obtained in these cases are invalid, or that they are necessarily uninteresting from the 'genuine' phenomenological perspective – the point is only that the methods used to generate them are not as directly appropriated from philosophical phenomenology as one is sometimes led to think. And despite this, neurophenomenology and micro-phenomenology are nonetheless closely connected to the phenomenological movement in the sense that their studies tend to be framed by the three foundational components mentioned above.

Next, there are various ways of using phenomenological results (concepts, descriptions) as *explananda* or *explicanda* for different scientific projects. This includes all cases where phenomenology is used for specifying the phenomenon to be explained or otherwise accounted for. A4 discusses some general issues connected to this role of phenomenology.[91] Here it suffices to point to the most well-known and concrete ways that phenomenology is applied in

[89] Phenomenological methods for conducting interviews are also widespread in the field of qualitative research. See Zahavi (2019; 2021) for an overview and critical discussion of some prevalent examples. For a recent proposal for a new phenomenological approach to qualitative research, see Køster and Fernandez (2021).

[90] Zahavi (2019; 2020) argues that it is questionable whether the phenomenological reduction is relevant beyond the strictly philosophical (transcendental) phenomenological project.

[91] More specifically, it discusses the division of labor (or lack thereof) between phenomenological *explananda* and scientific *explanantia*, the amount of epistemic authority phenomenology wields in this role, and the significance of this arrangement for understanding enactivism's concept of nature and its naturalistic credentials.

this way. First, *front-loading phenomenology* is the project of using phenomenological insights to inform experimental design. Initially proposed by Gallagher (2003), his paradigm example is the search for the neural correlates of the phenomenological distinction between the 'sense of ownership' and the 'sense of agency' concerning one's own body. *Formalized phenomenology* is a quite different project, aiming to articulate phenomenological descriptions in formal/mathematical terms (Marbach, 1993; Roy et al., 1999).[92] Third, there is the more theoretical part of the neurophenomenological program. Involving elements of formalized phenomenology, one here searches for illuminating relations between foundational concepts from philosophical phenomenology (e.g., temporality, affectivity) and formal models of the dynamical structures that make up the bodily and biological basis of the relevant experiential structures (Varela, 1999; Varela and Depraz, 2002). I'll say a bit more about neurophenomenology shortly. Lastly, we have the project that Gallagher (2003) calls *indirect* or *backloaded* phenomenology[93] – i.e., the project of phenomenologically *reinterpreting* already executed scientific studies, paradigmatically exemplified in Merleau-Ponty's works.[94]

In all of these cases, phenomenology is applied in its function of *eidetic psychology*, i.e., it works as a resource for insights about defining characteristics of experience. This, however, does not mean that the phenomenological contribution comes in the form of a fixed, *a priori* template that is simply and dogmatically taken for granted by the different research programs. On the contrary, as I argue in A4, the value of phenomenology for different programs

[92] Gallagher (2012: 76) calls the version of formalized phenomenology associated with Roy and colleagues "the CREA proposal" after the home institution of the interdisciplinary group of researchers that proposed it, the Centre de Recherce en Epistémologie Appliquée (CREA) in Paris. The recently proposed program of *computational phenomenology* (Ramstead et al., 2022) also fits under the formalized phenomenology umbrella. This does not mean that it is part of the enactive approach – on the contrary, I think the emphasis it places on *inference* as essential to cognition conflicts with core enactivist ideas.

[93] Gallagher refers to Braddock (2001) as an advocate of this conception of phenomenology's relevance to cognitive science. However, while Braddock's proposal certainly acknowledges the 'backloading' potential of phenomenology, it is misleading to reduce it to this one idea. On the contrary, Braddock advocates a *pluralistic*, multifaceted conception of phenomenology as integrated with a diversity of scientific approaches, which, as far as I can see, is able to incorporate all the different roles of phenomenology that I've covered in this section. In A4 I connect my view of phenomenological methodology to Braddock's.

[94] Enactivist literature is full of examples of reinterpreting research in light of enactive-phenomenological concepts. For instance, Held and Hein's studies on the role of movement in the genesis of vision in kittens (1963; Hein and Held, 1967) and Bach-y-Rita's experiments with sensory substitution systems (1972) have been interpreted as demonstrations of the embodied and action-oriented nature of perception (O'Regan and Noë, 2001; Noë, 2004; Gapenne, 2010; Varela et al., 1991; Fuchs, 2018). See Bermejo et al. (2020) for a discussion of some controversies regarding interpretations of Richard Held's research.

of research is only as good as its *practical* value: if it leads to fruitful results, it has proven itself relevant; if it doesn't, that particular application of phenomenology has proven to be inadequate or irrelevant. Moreover, in line with Merleau-Ponty's view of the relation between phenomenology and psychology, the insights gathered through these types of research should not be understood simply as non-essential contents of forms that are already completely delineated by pure phenomenology, but rather as *involving eidetic insights in their own right*, thus forming a *part* of the phenomenological project. Thus conceived, when phenomenology is employed as eidetic psychology in the mind sciences, it is not only the latter that benefits – the interaction of perspectives can in turn also enrich, refine, and modify the phenomenological insights by bringing them to bear on *real,* factual instances of embodied existence.

As indicated in the chapter on Merleau-Ponty, I think this is the best way to understand the idea of mutual illumination; namely, as the dialectical participation of phenomenological and other perspectives toward illuminating the same – eidetically organized, factually constituted – *existential structures*.

The enactivist notion of adaptive autonomy plays a special role in this picture. Proposed as a mathematically articulable way of capturing the general organizational form of embodied existence as it pertains to both its phenomenological ('lived') and biological ('living') aspects, it contributes to the dialectic of mutual illumination by offering an ontological and methodological framework for pursuing this dialectic as a dialectic of *naturalization*. In short, with the help of biological and formal/mathematical perspectives, the enactive approach holds that the essence of embodied existence involves – is constituted by – a specific form of naturally emergent organization. Let's round off this chapter on enactive phenomenology with a closer look at this idea of naturalization and how it relates to the phenomenological critiques of naturalism that we've encountered in earlier chapters.

7.4 Naturalized phenomenology

The term 'naturalization' can mean a range of different things.[95] When enactivists claim to be naturalizing phenomenology (Varela, 1997; Roy et al., 1999; Thompson, 2007), this must be understood as involving two interrelated dimensions – both of which we've already encountered. First, it consists in a fundamental rethinking of the concepts of mind and nature,

[95] In A1 I discuss Zahavi's (2017) differentiation between three forms of naturalized phenomenology, one of which is the position I there call 'the integrationist view.' Roy et al. (1999, pp. 64-72) provide a more extensive list of alternatives.

subject and object, relative to traditionally prevalent views: the objectivist concept of nature is rejected in favor of one that recognizes the irreducible and transcendental status of experience, and subjectivist and (traditional) transcendentalist views of consciousness are rejected in favor of one centered on embodied existence. Next, it consists in proposing the notion of adaptive autonomy as applicable to both experiential and biological structures. In order to better understand this latter idea, we need to return to the neurophenomenological project.

Neurophenomenology and enactive phenomenology

First proposed by Francisco Varela (1996), one of enactivism's founders, neurophenomenology is the project of searching for illuminating links between phenomenological descriptions of experience and cognitive scientific accounts of the bodily basis for experience, aided by formal tools such as – and especially – non-linear dynamical systems models. One underlying idea here is that there is "a surprising convergence" (Roy et al., 1999: 24) between certain phenomenological descriptions and results from biology and mathematical modeling in cognitive science. One crucial example of this can be found in Varela's (1999) aforementioned (5.6) neurophenomenology of the temporal structures of consciousness. To repeat, Varela there argues that the same non-linear dynamical systems models are able both to capture essential patterns of the consciousness of internal time as analyzed by Husserl and to describe dynamical patterns in the brain thought to underlie our experience of time. Assuming that Varela is correct, we here have a situation where the possibility of formalizing a phenomenological description in dynamical systems terms aids neuroscientific modeling, which in turn gives us a deeper understanding of the biological basis of experiential structures.[96] This, then, is a case of a neurophenomenological *naturalization* of time-consciousness.

Crucially, this naturalization is of a *non-reductive* kind. It is, in other words, no question here of thinking that experiential structures are *nothing but* neural structures, or that dynamical systems models can make phenomenological accounts redundant. Rather, as Thompson notes, "these three types of analysis – phenomenological, biological, and dynamical – are equally needed, and no attempt is made to reduce one to the other or eliminate one in favor of another" (2007: 357). On the contrary, it is precisely by keeping all three perspectives intact as equal

[96] I'm generally sympathetic to Varela's project here, but see Gallagher (2017b) for an attempt to make Varela's neurophenomenology of time-consciousness even more enactivist.

partners, investigating the ways they are, as Varela says, "*braided together*" (1999: 306), that the neurophenomenological naturalization is achieved.[97]

The significance of the notion of adaptive autonomy for the enactive project of naturalization should be understood in light of this non-reductive, three-part schema of neurophenomenology. Adaptive autonomy, that is, is an organizational property expressible in dynamical systems terms that is informed by both phenomenological and biological perspectives and as such works as a locus for a mutually enlightening circulation between all three domains.

From this perspective, a case could be made that what I've been calling 'enactive phenomenology' *just is* neurophenomenology. This would however require us to adopt a broad definition of the latter. First, given that enactive phenomenology, as I understand it, is not restricted to relations of mutual illumination between phenomenology and *neuroscience*, one would have to resist the connotations of the 'neuro' prefix in the name 'neurophenomenology'. This is entirely in line with Varela's original proposal, where he makes it clear that the prefix should be understood as referring "to the entire array of scientific correlates which are relevant in cognitive science," but that "to speak of a neuro-psycho-evolutionary-phenomenology would be unduly cumbersome" (1996: 330n1). Secondly, we would have to understand the phenomenological component of neurophenomenology as involving the kind of indirect and pluralistic approach to embodied existence that I've argued is pursued by Merleau-Ponty. This might entail an expansion of Varela's original presentation of neurophenomenology, insofar as he there construes phenomenology as a method for arriving at a form of direct intuition of or "intimacy" with the structures of one's own first-personal experiences (ibid.: 337).[98] The view I've advocated above and in the dissertation's articles, in contrast, is that phenomenology's evidence and subject matter are not restricted to first-personal experience as such, but extend to subjectivity, life, and nature as these manifest in the empirical world as experience*d* phenomena. This is in line with the general spirit of the enactive approach, where the notion of the mind as embodied existence involves a blurring of the subjective-objective distinction. It is this expanded notion of phenomenology that is at play in the phenomenological – Merleau-Ponty- and Jonas-inspired – interpretations of non-human organisms in terms of intrinsic purposiveness and sense-making, which are central to the notion of adaptive autonomy,

[97] As enactivists are eager to point out, although this proposal involves identifying structural correspondences between the experiential and the biological domain, the idea is not that isomorphism by itself is sufficient for explanation (Varela, 1996, pp. 344-345; Thompson, 2007, pp. 357-358).
[98] See Braddock (2001) for a critique of this aspect of Varela's neurophenomenology.

especially as it figures in the enactivist concept of nature (Weber and Varela, 2002; Di Paolo, 2005; Thompson, 2007).

Even though it in this way is *possible* to understand enactive phenomenology as equivalent to neurophenomenology, I prefer to define the latter more narrowly, in line with the connotations of its name, and thus to see enactive phenomenology as a more general project that *includes* neurophenomenology. Thus, enactive phenomenology is the project of naturalizing phenomenology by engaging it in a relation of mutual illumination with other scientific perspectives – not only neuroscience, psychology (in the narrow sense), and biology, but also e.g., sociology, economy, and history[99] – within the enactive view of embodied existence as an emergent adaptive autonomous system.

Naturalism revisited

We are now in position to turn to the question of how enactive phenomenology fares in light of the phenomenological critiques of naturalism that we encountered above (5.4, 6.4).[100] First, there is obviously no question here of thinking that consciousness and experience can be fully accounted for by experimental means alone, which was one of the naturalistic ideas rejected by Husserl. On the contrary, phenomenology is recognized as a non-reducible and indispensable resource for the sciences of mind, in line with Husserl's insistence that empirical psychology needs phenomenological or *eidetic* psychology.

The second form of naturalism rejected by Husserl was the idea that philosophy can be absorbed by natural science – an idea that on his view entails a relativization of intentional objects' meaning and validity, a deferring of intrinsic sense to external factors. Enactivists' recognition of the transcendental status of experience and irreducibility of experiential structures seems to steer them clear from this critique. It is however possible to push a bit further here.

First, Husserl might still argue that enactivism's view of experiential structures as holistic organizations of contingency, which is what their theory of adaptive autonomy entails, is too psychologistic. However, if we accept Merleau-Ponty's existential conception of phenomenology and his defense of the *Gestalt* notion against Husserl's critique, this should

[99] These latter perspectives are required to illuminate the intersubjective and ideological dimensions of our mode of being. *Linguistic Bodies* (Di Paolo et al., 2018) is the most comprehensive attempt to incorporate such perspectives within the enactivist view to date.

[100] There has been a range of phenomenological critiques of the idea of naturalizing phenomenology over the years. See e.g., Zahavi (2004b), Moran (2013), Pollard (2014), Gardner (2015). I discuss some of these in A1. Here I'll limit myself to comment on the relation between enactive phenomenology and the critiques of naturalism that we've encountered in this introductory essay.

not be seen as a problem. For, as I mentioned in the chapter on Merleau-Ponty (6.7), it is possible to see the holism involved in the enactive theory of autonomy as an advanced version of the *Gestalt* idea – an idea that preserves intrinsic and irreducible *sense* while construing it as an arrangement of contingent, sensible nature.

Secondly, one might nonetheless fear that the enactive idea of illuminating experiential structures by way of mathematical models and biological descriptions succumbs to a version of the naturalism that Merleau-Ponty objects to in Koffka's Gestalt theory (6.4), where phenomenal structures are posited as ultimately explainable in terms of physical structures.[101] However, given that the form of illumination subscribed to by enactivists is *mutual* and between equal, *non-reduced* partners, one is here not faced with the kind of hierarchical ontology Merleau-Ponty finds in Koffka, but on the contrary with a picture of a nature of non-reducible, intrinsically meaningful structures – a "universe of form" (Merleau-Ponty, 1942/1963: 133) – the essences of which are disclosable from a range of perspectives. It is, I think, possible to justify this enactive notion of naturalized phenomenology by borrowing the phrasing of Merleau-Ponty's defense of the Gestalt notion that we encountered above. That is, as long as the scientific models employed by enactivists help us "to understand many facts and [are] fruitful in the empirical order," then they "must have some phenomenological truth and must have something to contribute to phenomenology" (1964a: 77).[102] In this way, the enactivist way of dealing with the body-body problem, and thus the enactive naturalization of phenomenology, is construed as a pragmatically justified way of illuminating the structures of embodied existence.

A guiding idea of this dissertation is that the view that thus emerges, *in a certain, qualified sense*, can be seen as a naturalization of *transcendental* phenomenology. Not in the

[101] Sheredos (2017) seems to be arguing along these lines.

[102] The significance of mathematics for naturalized phenomenology is a complex issue that has not been a focus of my dissertation. Suffice it to note here that many proponents of the project of naturalizing phenomenology speculate that one reason for Husserl's and Merleau-Ponty's rejections of naturalism had to do with the underdeveloped state of mathematical science at their time, arguing that, if they had witnessed the last half century's advances in topology, non-linear dynamical systems theory, etc., their attitude would have been less hostile (Roy et al., 1999; Thompson, 2007: 85). See Zahavi (2010) for a critique of this idea. My own stance on the issue, which I take to be the enactivist stance, is that, as long as the mathematization of phenomenological descriptions that is enabled by these advances is not interpreted as a *reduction* of phenomenology, then I see nothing wrong in thinking that it can *contribute* to phenomenology both by providing models that can help illustrate phenomenological insights in new ways, and by serving as a link for mutual illumination between phenomenology and cognitive science. See also Vanzago (2012) for a Merleau-Pontian critique of tendencies in the mathematization project that focuses on the latter's phenomenological concept of nature.

sense that the phenomenologist's ideas and modes of inquiry are replaced by or subordinated to the methods and theories of natural science, but in the sense that the structures described by the former are conceptualized – in line with Merleau-Ponty's ontology of structure – as belonging to the domain of nature, with *empirically constituted* essences that lend themselves to illumination from perspectives beyond that of the pure phenomenologist. I explore this idea in more depth in A1, where I defend it against the 'transcendentalist challenge' to naturalized phenomenology, and in A4, where I defend its involvement in the enactive-phenomenological rethinking of nature from some naturalist critics.

7.5 Summary

We began this chapter with a brief look at enactivism's place in the context of cognitive science and how this is defined – in opposition to cognitivism – by a set of ideas closely associated with the phenomenological movement. Then we zoomed in closer on the significance of phenomenology for the enactive approach, seeing how two key phenomenological ideas – the recognition of the transcendental status of experience and the view of the mind as embodied existence – inform the way enactivists deal with the mind-body problem. This led us to explore some of the dimensions involved in the notion of 'mutual illumination', from the most foundational and philosophical to the more applied and experimental. Lastly, we considered some aspects of the idea that mutual illumination, as pursued in enactivism, involves a naturalization of phenomenology.

With this I hope to have provided a sense of the ways in which the phenomenological movement manifests in the enactive context and, in that way, to have established the most relevant elements for understanding how the idea of enactive phenomenology unifies the dissertation's articles as parts of one project.

8
Conclusion and further research

I started this dissertation with a set of questions: What is the mind, how should it be studied, and what is the relation between philosophical and scientific approaches to the mind? Over the course of this introductory essay, we have traced some key moments in the enactive-phenomenological movement's approach to these questions.

We began with a brief look at the rise of experimental psychology in 19th-century Germany, where many of the questions that still fuel the sciences of mind were first sparked. Looking next at Brentano's descriptive psychology, we saw how the context of this new psychology was also an important part of the soil from which phenomenology emerged. Committed to the naturalistic and empiricist ideas associated with the experimentalists, Brentano was convinced that both philosophy and psychology could find their proper ground in a descriptive approach to experience as such.

We then explored how Husserl, sharing this basic conviction, developed his phenomenology in a direction that, while being indebted to them, diverged from and went beyond Brentano's ideas in substantial ways. Rejecting Brentano's Cartesianism, Husserl gave new content to Brentano's idea of the intentionality of consciousness and deepened it through analyses of its embodied and intersubjective constitution. Further, with the method of eidetic variation, Husserl's phenomenology distanced itself from the traditional empiricism of Brentano by becoming a *science of essences*, and, with the method of reduction, phenomenology was transformed from descriptive psychology into a transcendental project. Here arose the *paradox of subjectivity*, the problem of understanding the relation between the transcendental subject and the empirical (psychological) subject – a problem Husserl dealt with somewhat ambiguously.

From this, we moved to see how Merleau-Ponty, drawing extensively from both Husserl's analyses and the psychological and physiological sciences of his day, seemed to embrace the paradoxical nature of subjectivity through his ontology of structure. Rejecting any absolute distinction between the subjective and the objective, the transcendental and the empirical, and essence and facticity, we here saw the emergence of a view of the mind as a multi-aspectual, embodied form of existence, and a view of phenomenology as a decentered and indirect approach to naturally emergent – eidetically organized and contingently constituted – structures. This, then, comes to make up some of the core ontological and

methodological commitments of enactive phenomenology, some of the more specific features of which have been sketched in the last chapter above.

My hope is that I through this journey have managed to give a clearer picture of both the historical roots of and, through that, my own understanding of the framework for the four articles that make up this dissertation. Before giving the stage to the articles, let me end this introductory essay with some thoughts on possible directions for future research in continuation of the present project.

Enactivism – Gestalt psychology reborn? Given enactivists' debt to Merleau-Ponty's phenomenology and the ways the latter is informed by Gestalt psychology, it should come as no surprise that there is also a significant degree of overlap between enactivist and Gestaltist ideas. Reading Mitchell Ash's (1995) history of Gestalt psychology as part of the research for this introductory essay, however, made me aware of how deep the similarities between the two actually run. Given the ontological and methodological significance the notion of *structure* (Gestalt) has for enactive phenomenology as I've presented it, much could certainly be gained from a deeper dive into the works of the Gestaltists. Two questions it would be interesting to pursue here are, what can contemporary enactivists learn from the Gestaltists, and to what extent can enactivism be seen as a modern version of Gestalt psychology?

Eco-phenomenology and enactivism in mutual enlightenment? One of the central topics of this dissertation is the significance of phenomenology for the enactivist concepts of life and nature. Though I hope to have contributed to clarifying some aspects of this issue, more work is required in order to establish a substantial and convincing alternative to objectivist views. Fortunately, there is already a whole branch of phenomenology dedicated to that task: *eco-phenomenology* (Brown and Toadvine, eds., 2003). Though more concerned with environmental and societal issues than with cognitive science, the eco-phenomenological literature is full of discussions of topics such as the natural constitution of subjectivity, the reconciliation of phenomenology and naturalism, and phenomenological arguments for purposiveness in non-human organisms. In light of this, it is a mystery why no one – at least as far as I've been able to find out – has yet explored the potential for fruitful dialogue between enactivists and eco-phenomenologists.

(Dis)continuities between enactivism and Merleau-Ponty's late philosophy. It is primarily Merleau-Ponty's early works – *The Structure of Behavior* and *Phenomenology of Perception* – that are being used as sources of inspiration within the enactive approach, and my own project is no exception. Given that Merleau-Ponty in later works both undertakes extensive studies in the philosophy of nature (1995/2003) and begins to develop a new ontology

(1964/1968), there are opportunities here for further exploring the value of his thoughts for the enactive project. To the extent that his later works – as some claim – diverge from the earlier ones, one might also discover fruitful points of tension with enactivist ideas. In any case, a good place to start here would be to follow up on the convergences David Morris (2018) indicates exist between enactivism and his own Merleau-Pontian *developmental ontology*.

Enactive phenomenology and Simondon's theory of individuation. A student of Merleau-Ponty, Gilbert Simondon (2005/2020) proposes an arguably even more radical ontology of structure than his teacher, seeking to fully overcome the separation between form and matter through close studies of *individuation* as a fundamental process of nature. Enactivists have recently begun to note, and exploit, the convergences between his theory and their own view of natural emergence (Di Paolo et al., 2018). There is, however, much potential here for exploring the relations between Simondon's ontology and the phenomenological dimension of enactivism – a task that is especially important in light of the significance I've argued that the notion of structure has for the latter.

From mutual illumination to dialectics? Drawing from figures such as Hegel, Marx, Merleau-Ponty, and Simondon, a specific notion of *dialectics* has recently been proposed as the core method for the enactive approach (Di Paolo et al, 2018, ch. 6). Though I suspect that the method of mutual illumination as I understand it is compatible with this proposal, there has as of yet been no discussion of the relation between the two, and it is thus far unclear exactly what role the phenomenological perspective is granted in the dialectical approach. Here, then, is a task to be pursued if one wants to understand the significance of phenomenology for contemporary developments of the enactive approach.

Bibliography

Antonelli, M. (2022). Consciousness and Intentionality in Franz Brentano. *Acta Analytica*, pp. 301-322.

Aristotle. (2008). *De Anima.* (R. D. Hicks, Trans.) New York: Cosimo Classics.

Ash, M. G. (1995). *Gestalt psychology in German culture, 1890-1967: Holism and the quest for objectivity.* Cambridge: Cambridge University Press.

Bach-y-Rita, P. (1972). *Brain mechanisms in sensory substitution.* New York: Academic Press.

Barbaras, R. (2005). A Phenomenology of Life. In *The Cambridge Companion to Merleau-Ponty* (pp. 206-230). Cambridge: Cambridge University Press.

Belt, J. (2020). Phenomenological Skepticism Reconsidered: A Husserlian Answer to Dennett's Challenge. *Frontiers in Psychology, 11*.

Belt, J. (2021). Eidetic Variation: a Self-Correcting and Integrative Account. *Axiomathes*.

Bermejo, F., Hüg, M. X., & Di Paolo, E. A. (2020). Rediscovering Richard Held: Activity and Passivity in Perceptual Learning. *Frontiers in Psychology, 11*.

Braddock, G. (2001). Beyond Reflection in Naturalized Phenomenology. *Journal of Consciousness Studies, 8*(11), pp. 3-16.

Brentano, F. (1995a). *Descriptive Psychology.* (B. Müller, Trans.) London: Routledge. (Original work published 1982)

Brentano, F. (1995b). *Psychology from an Empirical Standpoint.* (A. C. Rancurello, D. B. Terrell, & L. L. McAlister, Trans.) London: Routledge. (Original work published 1874)

Brown, C. S., & Toadvine, T. (Eds.). (2003). *Eco-Phenomenology: Back to the Earth Itself.* New York: State University of New York Press.

Carman, T. (2003). *Heidegger's Analytic: Interpretation, Discourse and Authenticity in Being and Time.* Cambridge: Cambridge University Press.

Carman, T. (2008). *Merleau-Ponty.* London: Routledge.

Carr, D. (1999). *The Paradox of Subjectivity: The Self in the Transcendental Tradition.* Oxford: Oxford University Press.

Cavallaro, M., & Heffernan, G. (Eds.). (2022). *The Existential Husserl: A Collection of Critical Essays.* Cham: Springer.

Chalmers, D. (1996). *The Conscious Mind.* Oxford: Oxford University Press.

Clark, A. (1997). *Being There: Putting Brain, Body, and World Together Again.* Cambridge: The MIT Press.

Comte, A. (1830). *Cours de philosophie positive* (Vol. 1). Paris: Bacheleier, Libraire pour les Mathématiques.

Cosmelli, D., David, O., Lachaux, J.-P., Martinerie, J., Garnero, L., Renault, B., & Varela, F. (2004). Waves of consciousness: ongoing cortical patterns during binocular rivalry. *Neuroimage, 23*, pp. 128-140.

De Jesus, P. (2016). From enactive phenomenology to biosemiotic enactivism. *Adaptive behavior, 24*(2), pp. 130-146.

Dennett, D. C. (1991). *Consciousness Explained.* London: Pinguin Books.

Dennett, D. C. (2001). The fantasy of first-person science. In S. Wuppuluri, & F. Doria (Eds.), *The Map and the Territory: Exploring the Foundations of Science, Thought and Reality* (pp. 455-473). Cham: Springer.

Depraz, N. (1999a). The phenomenological reduction as praxis. *Journal of Consciousness Studies, 16*(2-3), pp. 95-110.

Depraz, N. (1999b). When Transcendental Genesis Encounters the Naturalization Project. In J. Petitot, F. J. Varela, B. Pachoud, & J.-M. Roy (Eds.), *Naturalizing Phenomenology: Issues in Contemporary Phenomenology and Cognitive Science* (pp. 464-489). Stanford: Stanford University Press.

Depraz, N. (2001). *Lucidité du corps. De l'empiricisme transcendental en phénoménologie.* Dordrecht: Kluwer Academic Publishers.

Di Paolo, E. A. (2005). Autopoiesis, Adaptivity, Teleology, Agency. *Phenomenology and the Cognitive Sciences, 4*, pp. 429-452.

Di Paolo, E. A. (2018). The Enactive Conception of Life. In A. Newen, L. De Bruin, & S. Gallagher (Eds.), *The Oxford Handbook of 4E Cognition* (pp. 71-94). Oxford: Oxford University Press.

Di Paolo, E. A., Buhrmann, T., & Barandiaran, X. E. (2017). *Sensorimotor Life.* Oxford: Oxford University Press.

Di Paolo, E. A., Cuffari, E. C., & De Jaegher, H. (2018). *Linguistic Bodies: The continuity between life and language.* Cambridge: MIT Press.

Di Paolo, E., & Thompson, E. (2014). The enactive approach. In L. Shapiro (Ed.), *The Routledge handbook of embodied cognition* (pp. 68-78). Oxfordshire: Routledge/Taylor & Francis Group.

Dillon, M. C. (1987). Apriority in Kant and Merleau-ponty. *Kant Studien, 78*(1-4), pp. 403-423.

Dreyfus, H. L. (1982). Husserl's perceptual noema. In H. L. Dreyfus, & H. Hall (Eds.), *Husserl, Intentionality, and Cognitive Science* (pp. 97-123). Cambridge: MIT Press.

Dreyfus, H. L. (1992). *What Computers Still Can't Do: A Critique of Artificial Reason.* Cambridge: The MIT Press.

Drummond, J. J. (1990). *Husserlian Intentionality and Non-Foundational Realism.* Dordrecht: Kluwer Academic.

Fisette, D. (2018). Phenomenology and descriptive psychology. In D. Zahavi (Ed.), *The Oxford Handbook of the History of Phenomenology* (pp. 88-104). Oxford: Oxford University Press.

Fuchs, T. (2018). *Ecology of the Brain: The Phenomenology and Biology of the Embodied Mind.* Oxford: Oxford University Press.

Føllesdal, D. (1969). Husserl's Notion of Noema. *Journal of Philosophy, 66*(20), pp. 680-687.

Gallagher, S. (1997). Mutual Enlightenment: Recent phenomenology in cognitive science. *Journal of Consciousness Studies, 4*(3), pp. 195-214.

Gallagher, S. (2005). Phenomenological contributions to a theory of social cognition. *Husserl studies, 21*(2), pp. 95-110.

Gallagher, S. (2007). Simulation trouble. *Social Neuroscience, 2*(3-4), pp. 353-365.

Gallagher, S. (2012). On the possibility of naturalizing phenomenology. In D. Zahavi (Ed.), *The Oxford Handbook of Contemporary Phenomenology* (pp. 70-93). Oxford: Oxford University Press.

Gallagher, S. (2017a). *Enactivist Interventions: Rethinking the Mind.* Oxford: Oxford University Press.

Gallagher, S. (2017b). The Past, Present and Future of Time-Consciousness: From Husserl to Varela and Beyond. *Constructivist Foundations, 13*(1), pp. 91-97.

Gallagher, S. (2018). Rethinking Nature: Phenomenology and a Non-reductionist Cognitive Science. *Australasian Philosophical Review, 2*, pp. 125-137.

Gallagher, S. (2020). *Action and interaction.* Oxford: Oxford University Press.

Gallagher, S., & Zahavi, D. (2014). Primal impression and enactive perception. In V. Arstila, & D. Lloyd (Eds.), *Subjective Time: The Philosophy, Psychology, and Neuroscience of Temporality* (pp. 83-99). Cambridge: MIT Press.

Gapenne, O. (2010). Kinesthesia and the Construction of Perceptual Objects. In J. Stewart, O. Gapenne, & E. A. Di Paolo (Eds.), *Enaction: Toward a New Paradigm for Cognitive Science* (pp. 183-218). Cambridge: The MIT Press.

Gardner, S. (2015). Merleau-Ponty's Transcendental Theory of Perception. In S. Gardner, & M. Gist, *The Transcendental Turn.* Oxford: Oxford University Press.

Gelb, A., & Goldstein, K. (1920). Zur Psychologie des optischen Wahrnehmungs- und Erkennungsvorganges. In *Psychologische Analysen hirnpathologischer Fälle* (pp. 1-142). Leipzig: Johann Ambrosius Barth.

Gelb, A., & Goldstein, K. (1925). Über Farbenamnesie nebst Bemerkungen über das Wesen der amnestischen Aphasie überhaupt und die Beziehung zwischen Sprache und dem Verhalten zur Umwelt. *Psychologische Forschungen, 6*, pp. 127-186.

Giannotta, A. (2018). Color Relationism and Enactive Ontology. *Phenomenology and Mind, 14*, pp. 56-67.

Godfrey-Smith, P. (2001). On the Status and Explanatory Structure of Developmental Systems Theory. In P. E. Griffiths, & R. D. Gray (Eds.), *Cycles of Contingency: Developmental Systems and Evolution* (pp. 283-298). Cambridge: MIT Press.

Hall, H. (1979). The A Priori and the Empirical in Merleau-Ponty's Phenomenology of Perception. *Philosophy Today, 23*(4), pp. 304-309.

Hanna, R., & Thompson, E. (2003). The mind-body-body problem. *Theoria et Historia Scientiarum: International Journal for Interdisciplinary Studies, 7*, pp. 24-44.

Harrison, A. (2016). 'At Arm's Length': The Interaction Between Phenomenology and Gestalt Psychology. In J. Reynolds, & R. Sebold (Eds.), *Phenomenology and Science: Confrontations and Convergences* (pp. 1-21). New York: Palgrave Macmillan.

Heidegger, M. (1996). *Being and Time: A Translation of Sein und Zeit.* (J. Stambaugh, Trans.) Albany: State University of New York Press. (Original work published 1927)

Hein, A., & Held, R. (1967). Dissociation of the visual placing response into elicited and guided components. *Science, 158*, pp. 390-392.

Heinämaa, S. (2017). On the Complexity and Wholeness of Human Beings: Husserlian Perspectives. *International Journal of Philosophical Studies, 25*(3), pp. 393-406.

Heinämaa, S. (2018). Embodiment and Bodily Becoming. In D. Zahavi (Ed.), *The Oxford Handbook of the History of Phenomenology* (pp. 533-557). Oxford: Oxford University Press.

Held, R., & Hein, A. (1963). Movement-produced stimulation in the development of visually guided behavior. *Journal of Comparative and Physiological Psychology, 56*(5), pp. 872-876.

Huemer, W. (2019, January). *Franz Brentano*. Retrieved from Stanford Encyclopedia of Philosophy: https://plato.stanford.edu/archives/spr2019/entries/brentano/

Husserl, E. (1965). Philosophy as Rigorous Science. In *Phenomenology and the Crisis of Philosophy* (Q. Lauer, Trans., pp. 71-147). New York: Harper & Row. (Original work published 1910)

Husserl, E. (1970). *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy.* (D. Carr, Trans.) Evanston: Northwestern University Press. (Original work published 1954)

Husserl, E. (1973). *Cartesian Meditations: An introduction to phenomenology.* (D. Cairns, Trans.) Dordrecht: Springer. (Original work published 1931)

Husserl, E. (1980). *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy. Third book: Phenomenology and the foundations of the sciences.* (T. E. Klein, & W. E. Pohl, Trans.) The Hague: Martinus Nijhoff Publishers. (Original work published 1971)

Husserl, E. (1991). *On the phenomenology of the consciousness of internal time (1893-1917).* (J. B. Brough, Trans.) London: Kluwer academic publishers.

Husserl, E. (2003). *Philosophy of Arithmetic.* (D. Willard, Trans.) Dordrecht: Kluwer Academic Publishers. (Original work published 1891)

Husserl, E. (2012). *Ideas: General Introduction to Pure Phenomenology.* (W. B. Gibson, Trans.) London: Routledge. (Original work published 1913)

Hverven, S., & Netland, T. (2021). Projection or encounter? Investigating Hans Jonas' case for natural teleology. *Phenomenology and the Cognitive Sciences*.

Inkpin, A. (2017). Was Merleau-Ponty a 'Transcendental' Phenomenologist? *Continental Philosophy Review*, pp. 27-47.

Jonas, H. (1966). *The Phenomenon of Life.* Evanston: Northwestern University Press.

Kant, I. (2007). *Critique of Pure Reason.* (M. Weigelt, & M. Müller, Trans.) London: Penguin Books Ltd. (Original work published 1781)

Kelly, M. (2015). The subject as time: Merleau-Ponty's transition from phenomenology to ontology. In D. Morris, & K. Maclaren (Eds.), *TIme, memory, institution: Merleau-Ponty's new ontology of self* (pp. 199-216). Atens: Ohio University Press.

Kenkel, F. (1913). Untersuchung über den Zusammenhang zwischen Erscheinungsgrosse und Erscheinungsbewegung bei einigen sogenannten optischen Tauschungen. *Zeitschrift für Psychologie, 67*.

Koffka, K. (1915). Zur Grundlegung der Wahrnehmungspsychologie. Eine Auseinandersetzung mit V. Benussi. *Zeitschrift für Psychologie, 73*, pp. 11-90.

Koffka, K. (1936). *Principles of Gestalt Psychology.* London: Kegan Paul, Trench, Trubner & co., ltd.

Kuhn, T. S. (1996). *The Structure of Scientific Revolutions* (3. ed.). Chicago: The University of Chicago Press. (Original work published 1962)

Käufer, S., & Chemero, A. (2015). *Phenomenology: an introduction.* Cambridge: Polity Press.

Köhler, W. (1913). Akustische Untersuchungen III und IV. Vorläufige Mitteilung. *Zeitschrift für Psychologie, 64*.

Köhler, W. (1925). *The Mentality of Apes.* (E. Winters, Trans.) London: Routledge & Kegan Paul. (Original work published 1921)

Køster, A., & Fernandez, A. V. (2021). Investigating modes of being in the world: an introduction to Phenomenologically grounded qualitative research. *Phenomenology and the Cognitive Sciences*.

Lutz, A., Lachaux, J.-P., Martinerie, J., & Varela, F. (2002). Guiding the study of brain dynamics by using first-person data: synchrony patterns correlate with ongoing conscious status during a simple visual task. *Proceedings of the National Academy of Sciences USA, 99*, pp. 1586-1591.

Marbach, E. (1993). *Mental Representation and Consciousness: Towards a Phenomenological Theory of Representation and Reference.* Dordrecht: Kluwer Academic Publishing.

Maturana, H. R., & Varela, F. J. (1980). *Autopoiesis and Cognition: The Realization of the Living.* Boston: D. Reidel. (Original work published 1972)

McClamrock, R. (1995). *Existential cognition: Computational Minds in the World.* Chicago: University of Chicago Press.

McIntyre, R. (1986). Husserl and the representational theory of mind. *Topoi, 5*, pp. 101-113.

Merleau-Ponty, M. (1963). *The Structure of Behavior.* Pittsburgh: Duquesne University Press. (Original work published 1942)

Merleau-Ponty, M. (1964a). Phenomenology and the Sciences of Man. In M. Merleau-Ponty, & J. M. Edie (Ed.), *The Primacy of Perception: And Other Essays on Phenomenological Psychology, the Philosophy of Art, History and Politics* (J. Wild, Trans., pp. 43-95). Evanston: Northwestern University Press.

Merleau-Ponty, M. (1964b). *Signs.* (R. C. McCleary, Trans.) Evanston: Northwestern University Press.

Merleau-Ponty, M. (1964c). The Primacy of Perception. In J. M. Edie (Ed.), *The Primacy of Perception: And Other Essays on Phenomenological Psychology, the Philosophy of Art, History and Politics* (J. M. Edie, Trans., pp. 12-42). Evanston: Northwestern University Press.

Merleau-Ponty, M. (1968). *The Visible and the Invisible.* (C. Lefort, Ed., & A. Lingis, Trans.) Evanston: Northwestern University Press. (Original work published 1964)

Merleau-Ponty, M. (1973). *The Prose of the World.* (C. Lefort, Ed., & J. O'Neill, Trans.) Evanston: Northwestern University Press. (Original work published 1969)

Merleau-Ponty, M. (2003). *Nature: Course Notes from the Collége de France.* (D. Séglard, Ed., & R. Vallier, Trans.) Evanston: Northwestern University Press.

Merleau-Ponty, M. (2010). *Child Psychology and Pedagogy: The Sorbonne Lectures 1949-1952.* (T. Welsh, Trans.) Evanston: Northwestern Universtiy Press.

Merleau-Ponty, M. (2012). *Phenomenology of Perception.* New York: Routledge. (Original work published 1945)

Metzinger, T. (2003). *Being No One.* Cambridge: MIT Press.

Moran, D. (2001). Introduction. In E. Husserl, *Logical Investigations* (pp. xxi-lxxv). London: Routledge.

Moran, D. (2013). 'Let's Look at It Objectively': Why Phenomenology Cannot be Naturalized. *Royal Institute of Philosophy Supplement, 72*, pp. 89-115.

Morris, D. (2018). *Merleau-Ponty's Developmental Ontology.* Evanston: Northwestern University Press.

Netland, T. (2020). The living transcendental: an integrationist view of naturalized phenomenology. *Frontiers in Psychology, 11*. doi:https://doi.org/10.3389/fpsyg.2020.01548

Netland, T. (2022). The lived, living, and behavioral sense of perception: An enactive-phenomenological response to a sensorimotor critique. *Phenomenology and the cognitive sciences*.

Newen, A., De Bruin, L., & Gallagher, S. (2018). 4E Cognition: Historical Roots, Key Concepts, and Central Issues. In A. Newen, L. De Bruin, & S. Gallagher (Eds.), *The Oxford Handbook of 4E Cognition* (pp. 3-15). Oxford: Oxford University Press.

Noë, A. (2004). *Action in Perception.* Cambridge: MIT Press.

O'Regan, J. K., & Noë, A. (2001). A sensorimotor account of vision and visual consciousness. *Behavioral and Brain Sciences, 24*, pp. 883-917.

Parker, R. K. (Ed.). (2021). *The Idealism-Realism Debate Among Edmund Husserl's Early Followers and Critics.* Cham: Springer.

Petitmengin, C. (2006). Describing one's subjective experience in the second person: An interview method for the science of consciousness. *Phenomenology and the cognitive sciences, 5*, pp. 229-269.

Petitmengin, C., Navarro, V., & Le Van Quyen, M. (2007). Anticipating seizure: pre-reflective experience at the center of neurophenomenology. *Consciousness and Cognition, 16*(3), pp. 746-764.

Petitmengin, C., Van Beek, M., Bitbol, M., Nissou, J.-M., & Roepstorff, A. (2017). What is it like to meditate? Methods and issues for a micro-phenomenological description of meditative experience. *Journal of Consciousness Studies, 24*(5-6), pp. 170-198.

Petitot, J., Varela, F. J., Pachoud, B., & Roy, J.-M. (Eds.). (1999). *Naturalizing Phenomenology: Issues in Contemporary Phenomenology and Cognitive Science.* Stanford: Stanford University Press.

Pollard, C. (2014). Merleau-Ponty and Embodied Cognitive Science. *Discipline Filosofiche, 24*(2), pp. 67-90.

Pugliese, A. (2018). Motivational Analysis in Husserl's Genetic Phenomenology. *Studia Phaenomenologica, 18*, pp. 91-108.

Ramstead, M. J. (2015). Naturalizing what? Varieties of naturalism and transcendental phenomenology. *Phenomenology and the cognitive sciences, 14*, pp. 929-971.

Ramstead, M. J., Seth, A. K., Hesp, C., Sandved-Smith, L., Mago, J., Lifshitz, M., . . . Constant, A. (2022). From Generative Models to Generative Passages: A Computational Approach to (Neuro)Phenomenology. *Review of Philosophy and Psychology*.

Reynolds, J. (2018). *Phenomenology, Naturalism and Science: A Hybrid and Heretical Proposal.* New York: Routledge.

Rojcewicz, R., & Schuwer, A. (1989). Translators' introduction. In E. Husserl, *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy, second book* (pp. xi-xvi). Dordrecht: Kluwer Academic Publishers.

Romdenh-Romluc, K. (2018). Science in Merleau-Ponty's Phenomenology: From the Early Work to the Later Philosophy. In D. Zahavi (Ed.), *The Oxford Handbook of the History of Phenomenology* (pp. 340-359). Oxford: Oxford University Press.

Roy, J.-M., Petitot, J., Pachoud, B., & Varela, F. J. (1999). Beyond the Gap: An Introduction to Naturalizing Phenomenology. In J. Petitot, F. J. Varela, B. Pachoud, & J. M. Roy (Eds.), *Naturalizing Phenomenology: Issues in Contemporary Phenomenology and Cognitive Science* (pp. 1-80). Stanford: Stanford University Press.

Scheler, M. (2008). *The Nature of Sympathy.* (P. Heath, Trans.) London: Routledge. (Original work published 1923)

Schwitzgebel, E. (2019). *Introspection*. (E. N. Zalta, Editor) Retrieved from The Stanford Encyclopedia of Philosophy (Winter 2019 Edition): https://plato.stanford.edu/archives/win2019/entries/introspection/

Shahid, S. (2022). The A Priori: Merleau-Ponty's 'New Definition'. *International Journal of Philosophical Studies, 30*(4), pp. 399-419.

Sheredos, B. (2017). Merleau-Ponty's Immanent Critique of Gestalt Theory. *Human Studies, 40*, pp. 191-215.

Simondon, G. (2020). *Individuation in Light of Notions of Form and Information.* (T. Adkins, Trans.) Minneapolis: The University of Minnesota Press. (Original work published 2005)

Slatman, J. (2019). The Körper-Leib distinction. In G. Weiss, A. Murphy, & G. Salamon (Eds.), *50 Concepts for a Critical Phenomenology* (pp. 203 - 209). Evanston: Northwestern University Press.

Slatman, J., & Widdershoven, G. (2010). Hand Transplants and Bodily Integrity. *Body & Society, 16*(3), pp. 69-92.

Sokolowski, R. (1984). Intentional analysis and the noema. *Dialectica, 38*(2-3), pp. 113-129.

Solli, M. (2017). *Towards an Embodied Hermeneutics: Gadamer, Merleau-Ponty, and Nondirective Meditation.* Trondheim: Doctoral theses at NTNU.

Spiegelberg, H. (1971). *The phenomenological movement: a historical introduction* (2. ed.). Dordrecht: Springer Science+Business Media.

Thompson, E. (2007). *Mind in Life: Biology, Phenomenology, and the Sciences of Mind.* Cambridge: Harvard University Press.

Titchener, E. B. (1910). *A Textbook of Psychology.* New York: Macmillan.

Toadvine, T. (2009). *Merleau-Ponty's Philosophy of Nature.* Evanston: Northwestern University Press.

Vanzago, L. (2012). Naturalizing Phenomenology and the Nature of Phenomena: On Varela, Petitot, and Merleau-Ponty. *Chiasmi International, 14*, pp. 131-142.

Varela, F. J. (1996). Neurophenomenology: A methodological remedy for the hard problem. *Journal of Consciousness Studies, 4*, pp. 330-49.

Varela, F. J. (1997). The naturalization of phenomenology as the transcendence of nature: Searching for generative mutual constraints. *Alter: revue de phénoménologie, 5*, pp. 355-385.

Varela, F. J. (1999). The Specious Present: A Neurophenomenology of Time Consciousness. In J. Petitot, F. J. Varela, & B. R.-M. Pachoud (Eds.), *Naturalizing Phenomenology* (pp. 266-314). Stanford: Stanford University Press.

Varela, F. J., & Depraz, N. (2005). At the Source of Time: Valence and the constitutional dynamics of affect. *Journal of Consciousness Studies, 12*(8-10), pp. 61-81.

Varela, F. J., & Schear, J. (Eds.). (1999). *The View from Within: First-person approaches to the study of consciousness.* Bowling Green: Imprint Academic.

Varela, F. J., Thompson, E., & Rosch, E. (1991). *The Embodied Mind: Cognitive Science and Human Experience.* Cambridge: MIT Press.

Villalobos, M., & Ward, D. (2016). Lived experience and cognitive science: Reappraising enactivism's Jonasian turn. *Constructivist Foundations, 11*, pp. 204-233.

Walsh, P. J. (2013). Husserl's Concept of Motivation: The Logical Investigations and Beyond. *History of Philosophy & Logical Analysis, 16*(1), pp. 70-83.

Ward, D., Silverman, D., & Villalobos, M. (2017). Introduction: The Varieties of Enactivism. *Topoi, 36*, pp. 365-375.

Weber, A., & Varela, F. J. (2002). Life after Kant: Natural purposes and the autopoietic foundations of biological individuality. *Phenomenology and the Cognitive Sciences*, pp. 97-125.

Wehrle, M. (2020). Being a body and having a body. The twofold temporality of embodied intentionality. *Phenomenology and the Cognitive Sciences, 19*, pp. 499-521.

Wertheimer, M. (1912). Experimentelle Studien über das Sehen von Bewegung. *Zeitschrift für Psychologie, 61*.

Wheeler, M. (2005). *Reconstructing the Cognitive World: The Next Step.* Cambridge: MIT Press.

Wrathall, M. A. (2005). Motives, Reasons, and Causes. In T. Carman, & M. B. Hansen (Eds.), *Cambridge Companion to Merleau-Ponty* (pp. 111-128). Cambridge: Cambridge University Press.

Wundt, W. (1874). *Grundzüge der physiologischen Psychologie.* Leipzig: Wilhelm Engelmann.

Zahavi, D. (1994). Husserl's Phenomenology of the Body. *Études Phénoménologiques*(19), pp. 63-84.

Zahavi, D. (2002). Merleau-Ponty on Husserl: A Reappraisal. In T. Toadvine, & L. Embree (Eds.), *Merleau-Ponty's Reading of Husserl* (pp. 3-29). Dordrecht: Kluwer Academic Publishers.

Zahavi, D. (2004a). Back to Brentano? *Journal of Consciousness Studies, 11*(10-11), pp. 66-87.

Zahavi, D. (2004b). Phenomenology and the project of naturalization. *Phenomenology and the Cognitive Sciences*(3), pp. 331-347.

Zahavi, D. (2010). Naturalized Phenomenology. In S. Gallagher, & D. Schmicking (Eds.), *Handbook of Phenomenology and Cognitive Science* (pp. 3-19). London: Springer.

Zahavi, D. (2013). Naturalized Phenomenology: A Desideratum or a Category Mistake? *Royal Institute of Philosophy Supplement*(27), pp. 23-42.

Zahavi, D. (2019). The practice of phenomenology: The case of Max van Manen. *Nursing Philosophy, 21*(2).

Zahavi, D. (2021). Applied phenomenology: why it is safe to ignore the epoché. *Continental Philosophy Review, 54*, pp. 259-273.

PART II
THE ARTICLES

Note on publications and authorship

As mentioned in the introduction, three of the four articles have been published:

- A1: "The living transcendental: An integrationist view of naturalized phenomenology" was published in 2020 in *Frontiers in Psychology* 11 (1548): 1-17.
- A2: "The lived, living, and behavioral sense of perception: An enactive-phenomenological response to a sensorimotor critique" was published in 2022 in *Phenomenology and the Cognitive Sciences*: 1-25.
- A3: "Projection or encounter? Investigating Hans Jonas' case for natural teleology," co-authored with Sigurd Hverven, was published in 2021 in *Phenomenology and the Cognitive Sciences*: 1-26.

Except differences in formatting, page and footnote numbers, and enumeration of sections, as well as some minor corrections at the word-level, the versions of these articles that are rendered below are identical to the published texts.

On the authorship of A3: This article is based on an original idea and draft by Sigurd Hverven. The draft was rewritten, restructured, and expanded significantly as a joint effort by both authors. Hverven had the main responsibility for the parts about Hans Jonas, and I had the main responsibility for the parts about enactivism. Both authors took several rounds reading, assessing, and making changes to all parts of the manuscript.

9
The living transcendental
An integrationist view of naturalized phenomenology (A1)

In this article I take on the 'transcendentalist challenge' to naturalized phenomenology, highlighting how the ontological and methodological commitments of Merleau-Ponty's philosophy point in the direction of an integration of the transcendental and the scientific, thus making room for a productive exchange between philosophy and psychological science when it comes to understanding consciousness and its place in nature. Discussing various conceptions of naturalized phenomenology, I argue that what I call an 'integrationist view' is required if we are to make sense of the possibility of productive exchange between phenomenology and the sciences. My main argument is that if we conceive of consciousness as a structure of behavior ontologically prior to the distinctions between objectivity and subjectivity and third- and first-person perspectives, we arrive at a view of the transcendental as not essentially separate from the domain of science, but rather as contingent organizational norms of empirical nature that are best illuminated through a dialectical exchange between phenomenological and scientific approaches. I end by showing how Merleau-Ponty's engagement with the 'Schneider case' is an example of such an integration.

9.1 Introduction

During the last decades, phenomenology has become increasingly influential as a resource for developments in the mind sciences. This is especially so in the research program known as *the enactive approach*, one of the central tenets of which is, in the words of its co-founder Evan Thompson, that "[i]t is not only possible, but also necessary, to pursue phenomenology and experimental science as mutually constraining and enlightening projects" (2007: 273). The prospects of such a relationship are, however, not without difficulties, but have been challenged both by people skeptical of phenomenology's credentials altogether and by phenomenologists who reject the idea of 'naturalizing' a philosophy that, in their view, is concerned with the conditions that *enable* scientific thinking in the first place and as such cannot be informed by its results. This latter, 'transcendentalist challenge' to naturalized phenomenology, is the motivating force for this paper.

My overarching aim in what follows is to propose the position I call the 'integrationist view' (IV), which consists in a reconceptualization of the notions of the 'transcendental' and 'nature' in a way that allows for a methodological and ontological integration of scientific and phenomenological perspectives. In outlining this view, I draw on the early works of Maurice

Merleau-Ponty, the classical phenomenologist known for his extensive engagement with scientific literature. I am far from the first to argue that Merleau-Ponty's philosophy is a promising starting point for making sense of the project of naturalizing phenomenology. At the same time, as Jack Reynolds has recently observed, "exactly how to understand the Gordian knot concerning Merleau-Ponty's implicit and explicit commitments regarding transcendental reasoning, phenomenology and empirical science, remains contested, more than 50 years after his death" (2017: 85). Thus, although I do not presume to completely resolve this knot here, this paper is also a contribution to discussions in Merleau-Ponty scholarship. The reading I propose emphasizes the significance of his first book, *The Structure of Behavior* (1942/1963; henceforth *Structure*), as a background for making sense of the further development of his thought. As such, my reading is at least partly aligned with and indebted to Toadvine (2009) and Morris (2018), both of which, notwithstanding some interpretative differences, see Merleau-Ponty primarily as a philosopher of nature, one of the key concerns of which was to establish the idea of an immanent, expressive *sense* of nature in the form of the embodied and active structure of living organisms' existence. In this way, I see this paper as a contribution to the project of construing enactivism as a philosophy of nature (e.g., Gallagher, 2017: 21–24).

The crux of my argument is that if we conceive of consciousness as a structure of behavior ontologically prior to the distinctions between objectivity and subjectivity and third- and first-person perspectives, we arrive at a view of the transcendental as *not* essentially separate from the scientific, but rather as contingent organizational norms of nature that are best illuminated through a dialectical exchange between phenomenological and scientific approaches. I start by sketching the general contours of transcendental philosophy and the 'transcendentalist challenge' to naturalized phenomenology, taking Gardner's (2015) transcendentalist reading of Merleau-Ponty as the point of departure (9.2). I then turn to Zahavi's (2017) suggestion of two alternative ways to understand what a 'naturalized phenomenology' amounts to, arguing that the position I label 'modest transcendentalism' lacks the resources for making adequate sense of the possibility of a productive exchange between phenomenology and science, and propose that this task rather requires the 'integrationist view' (9.3). Thereafter, I show how the notion of structures of behavior is apt to yield an integrationist ontology (9.4) before I return to criticize Gardner's transcendentalist reading of Merleau-Ponty in the context of the phenomenological method (9.5). Lastly, I propose a way to read Merleau-Ponty's engagement with the 'Schneider case' in *Phenomenology of Perception* (1945/2012; henceforth *Phenomenology*) as an instance of the IV in action (9.6).

9.2 The transcendentalist challenge and varieties of transcendentalism

In "Merleau-Ponty's Transcendental Theory of Perception" (2015), Gardner gives expression to one of the main theoretical challenges to the idea of a naturalized phenomenology, namely, the argument that phenomenology is essentially a form of *transcendental* philosophy and, as such, operates in a domain strictly independent from the scientific.[103] Indeed, the main target of Gardner's paper is what he calls the "Psychological Interpretation," which reads Merleau-Ponty's *Phenomenology* as offering insights about perception that can both be put to use by and find support in empirical cognitive science.[104] On Gardner's reading, on the contrary, Merleau-Ponty's arguments have the same "form and idealistic trajectory" as Immanuel Kant's transcendental philosophy (2015: 313) and "involves no positive estimate of psychological science as an independent source of knowledge that philosophy ought to accommodate" (2015: 319), leading him to conclude that the naturalistic philosophy of psychology that some find in the *Phenomenology* "has only an oblique relation to the position Merleau-Ponty is actually arguing for" (2015: 321). Before looking closer at Merleau-Ponty's position, let us have a look at transcendental philosophy more generally.

What is transcendental philosophy? The history of this notion and the discussions surrounding it shows that it is difficult, if not impossible, to give one precise characterization that covers all its appearances.[105] I will try to give a sense of this fluidity of the notion in what follows, but take this as a first, provisional definition: Transcendental philosophy aims to uncover the ground for objective knowledge, where 'ground' is understood not as a Cartesian foundational proposition that secures the possibility of knowledge, but rather as the structures of consciousness constitutive of our knowing. The prime example here is Kant. In *Critique of Pure Reason* (2007), he asked how it is possible for experience to be a source of knowledge and answered that the necessary conditions for this are that experience be oriented in space and time (the forms of intuition), structured in conformity with the categories of the understanding (e.g., causality and substantiality), and unified in relation to the unity of the transcendental

[103] I'm I am here using Gardner as representative for a concern raised by multiple phenomenologists, (e.g., De Preester, 2002; Moran, 2013).
[104] Gardner's examples include reading Merleau-Ponty as providing "a convincing critique of the representationalism which holds sway in cognitive science" and an "account of skill acquisition [that] stands in deep accord with developments in brain science neural network theory" (2015: 297).
[105] Habermas (1991) provides a clear overview of the development and internal and external critiques of the tradition of transcendental philosophy.

subject (the 'I think').[106] Notice how this project is fundamentally different from what we find in the sciences. After all, science takes the possibility and validity of experience, objectivity, and knowledge for granted, depending on these in its project of gathering facts and constructing theories about the world. Transcendental philosophy, on the other hand, does not seek fact or theory in the same sense but rather the conditions that make them possible. We can thus see how the idea of a productive exchange between these two domains is problematic: science does not seem to require an understanding of its transcendental conditions of possibility in order to succeed, and transcendental philosophy cannot rely on scientific findings without presupposing what it seeks to understand.[107]

This distinction is underlined by the fact that transcendental philosophy is a non-empirical, *a priori* endeavor. Consider how Kant deals with the concept of causality: On his view, we do not acquire this concept through experience; rather, it belongs to the subject as one of its necessary conditions for experience to be possible in the first place. Methodologically, this means that the transcendental here is identifiable by purely *a priori* means. Exactly how to understand the nature of Kant's transcendental arguments is a discussion in its own right and not something I will dig into here.[108] For our purposes, it suffices to draw attention to one way we can understand the contrast and continuity between Kant and the phenomenological tradition when it comes to the notion of the transcendental. In this context, we can distinguish between two forms of transcendental argument found in Kant – one that is dismissed by the phenomenologists and one that they to some degree take up and refine. In the former, we find progressive arguments aimed at establishing the necessary objective validity of certain concepts (e.g., causality). These lead Kant to construe the transcendental as structures belonging to subjectivity (more precisely to the understanding) independently of any particular experience, which determines in advance the possible form of all future experience. The latter form of argument is regressive, beginning from given facts or experiences and proceeding to reconstruct the conditions for the possibility of their givenness as such.[109] This means that one here is paying more attention to concrete matters and how these are experienced

[106] This is intended to give a rough grasp – and not in any way to be an exact rendering – of what happens in Kant's first Critique.
[107] This is not to say that transcendental philosophy has no interest in science. On the contrary, its main motivation has traditionally been to establish a philosophical ground for scientific knowledge.
[108] But see, e.g., Strawson (1966); Henrich (1969), Stern (2000), and Ameriks (2003).
[109] For instance, what structures are constitutive of operations in pure arithmetic? (Notice that the question here is neither whether it is possible nor whether its results will be universally true). Kant's answer is that this possibility, among other things, depends on time as a pure, subjective form of intuition (2007: B17, B56).

and apprehended compared to in the former case, where the aim rather is to establish the necessary forms all such matters must conform to.

By rejecting the first kind of argument and modifying the second, Edmund Husserl's transcendental phenomenology represents a shift in the notion of the transcendental. Now, the transcendental is conceived not as belonging solely to the subject but to the subject-world *correlation*, not as principles abstractly outlining the form of all possible experience but as structures constitutive of and originating within actual experience.[110] This makes the necessity and *apriority* of the transcendental in Husserl's philosophy quite different from that found in Kant. As Julia Jansen observes (presumably thinking primarily of Kant's progressive arguments),

> Kant thinks of a necessary unity as a unity that receives its necessity 'top–down' from the 'highest point' of reason […]. Husserl, on the contrary, thinks of unity 'laterally,' as a unity of 'coincidence (*Deckung*),' which enables *a priori* insight not only into necessities that 'reason itself produces according to its own plan' (B xiii), as Kant famously claimed, but also into necessities reason genuinely *discovers*. (Jansen, 2015: 48–49, orig. emphases)

In other words, the transcendental is now understood as in a certain sense experientially discoverable, drawing it closer to the empirical domain. This is evident in Husserl's claim that the proper method of transcendental philosophy should be *description* rather than deduction. On his view, this shift represents a necessary correction of Kant's project, which from the phenomenological perspective takes the form of problematic metaphysics, resting for instance on a misguided separation between sensibility and the understanding (ibid.: 59). Rather than assuming such a separation and then attempting to identify the contribution of each faculty through a rational construction, phenomenology takes the actuality of perception as its point of departure and seeks to describe, clarify, and analyze the emergence of meaning and objectivity as evident *therein*.

While this surely moves the transcendental domain closer to the empirical relative to what we find in Kant, it does not entail that the distinction between the transcendental and scientific domains collapses. In Husserl's phenomenology, the key methodological tools for arriving at the domain proper to transcendental phenomenology are the *epoché* and the *reduction*. The *epoché* amounts to a shift from the 'natural' to the 'phenomenological' attitude

[110] Zahavi (1996) argues convincingly that another way in which Husserl transforms Kant's transcendental philosophy, is by recognizing the constitutive role of intersubjectivity, thus going beyond the emphasis on the individual consciousness.

through *bracketing* or *suspending* our normal interest in and presuppositions regarding the external world as such, so as to focus on the subject-world correlation – i.e., on the *how* of experience rather than the *what* of the experience*d*. The reduction is then the next step, consisting of the systematic examination of this correlational structure in light of its transcendental function.[111] This now marks the difference between phenomenology (*qua* transcendental) and science. While they both might take their data from experience, their attitudes are fundamentally distinct – the latter seeks to know the *objects* of experience and takes their existence as such for granted, whereas the former aims to clarify the constitutive structures of the givenness of the world thanks to which it appears as objective, meaningful, etc. In section 5, we will look closer at Merleau-Ponty's verdict of this method, which famously is that "the most important lesson of the reduction is the impossibility of a complete reduction" (2012: lxxvii).

The transcendental conditions identified through the phenomenological method are of a quite different sort from those deduced by Kant. Here, we move from the form-imposing role of the categories of the understanding, to constitutive conditions 'visible' within experience, such as consciousness' horizonal structures (its co-intention of 'absent' and indeterminate features such as past and future, the hidden profiles of visual objects, etc.). Again, this means that we are operating with a quite different notion of 'transcendental' here than what we started out with. As Jansen suggests, Kant would probably have dismissed the transcendental structures identified by Husserl as "crude empirical generalities" (2015: 78) that fail to meet his strict criteria for *a priori* necessity. As we will see in the next section, some of these "generalities" identified by phenomenology – more precisely, the invariances of experience disclosed by eidetic analyses[112] – seem to mark a point of contact between phenomenology and psychological science in Husserl's view. A discussion of what this means for the prospects of a naturalized phenomenology will have to wait until then.

For now, these are the key takeaways. Despite his departure from Kant's method and metaphysics, Husserl maintains the distinction between transcendental and scientific enterprises. However, the transcendental is now understood as 'closer' to the empirical, giving

[111] There are competing interpretations concerning the exact nature of the epoché and the reduction in Husserl's phenomenology. Here, I'm I am relying on Dan Zahavi's illuminative rendering in *Husserl's legacy* (2017: 56–60).

[112] The method of eidetic analysis consists, in short, in an imaginative variation of the phenomenon in question in order to become aware of its invariant structure or essence – that without which it would no longer be what it is. In this way, it aims to answer questions such as "what do essentially characterize acts of perceiving, imagining, remembering, judging, etc., and how are these different acts related to each other?" (Zahavi, 2017: 15).

a new sense to its necessary and *a priori* status (invariant/essential constitutive structures of experience rather than forms logically imposed upon it). The distinction between science and transcendental philosophy is maintained but now understood as one of *attitudes*. The prospects for a mutually informative relationship between them still look dim – after all, one presupposes the attitude which the other suspends and analyses, and more generally, they are simply preoccupied with different kinds of questions.

Let us now return to Gardner's transcendentalist interpretation of Merleau-Ponty's *Phenomenology*. On his view, transcendental philosophy here undergoes yet a transformation. That is, he sees Merleau-Ponty as establishing *pre-objective* perception as "a ground-level transcendental condition" (2015: 307). As such, Merleau-Ponty's philosophy entails a critique of both Kant's and Husserl's transcendental projects to the extent that they are characterized by "objective thought." "Objective thought" here means a certain dogmatic way of accounting for experience's "articulation into objects and its character […] as involving a relation of subject to object" (ibid.: 301). The intellectualist tendencies of Merleau-Ponty's transcendentalist predecessors fall into this category due to their taking thoughts about objects as the ultimate *explanans* (i.e., objective thought is responsible for the objectual character of experience). A different form of the same dogma is shared by the view we can call scientific realism or naturalism ("empiricism" in Merleau-Ponty's terminology), which takes the objectual character of experience to be caused by a subject-independent world already articulated into objects. In short, both intellectualism and empiricism take objectivity as a *given*, and Merleau-Ponty's transcendental project consists in disclosing the *origin* of objective thought as such from the pre-objective and ambiguous perceptual field. It is on this basis that Gardner dismisses interpretations of Merleau-Ponty that see him as providing, among other things, "arguments for the dependence […] of consciousness on embodiment [and] a convincing critique of the representationalism which holds sway in cognitive science" (2015: 297). Such psychological readings take consciousness and perception as *objects* to be described and explained, rather than as the field where objectivity emerges in the first place, and thus leaps over the issue that actually drives the *Phenomenology*.

Although I disagree with the strict separation Gardner sets up between transcendentalism and science, I think his claim that Merleau-Ponty's transcendental philosophy is *ontological* in form is basically correct.[113] As he says, "talk of pre-objective being

[113] I do, however, not agree that Merleau-Ponty's transcendentalism warrants the label of an "idealist metaphysics" (2015: 309). I'll I will not be able to explicitly argue this point here, but I take my case

is not just talk of *experience* prior to the involvement of objectivity concepts in experience: it is talk of experienced *being* which is pre-objective" (2015: 298, orig. emphases). *Phenomenology*'s critique of "objective thought," then, is not merely a critique of certain conceptions of experience; rather, it is "a critique of the *metaphysical* claim that objective representation is adequate to the representation of reality or, put the other way around, that reality is as objectivity concepts represent it as being" (ibid.). As we will see later, this ontological dimension of Merleau-Ponty's project is a key element in the *integrationist view* I am suggesting. In other words, my point of divergence from Gardner's interpretation concerns what the metaphysics of pre-objectivity entails for the prospects of a mutually enlightening relation between phenomenology and science. On my view, which conceives it as a continuation of the project *Structure* sets in motion, Merleau-Ponty's ontology represents a promising step toward a 'phenomenologizing' of nature where the border between the transcendental and the scientific becomes diffused. For Gardner, on the contrary, the transcendental nature of Merleau-Ponty's project means that its extensive engagement with scientific literature must be understood merely as, in Reynolds' apt words, a sort of "Wittgenstein's ladder," which should be kicked away once the transcendental is reached (2017: 98). "Engagement with scientific psychology," Gardner claims,

> sharpens and refines our appreciation of psychological considerations, which in turn helps us to reach a position from which phenomenological truth can be grasped on the basis of an apodictic relation to the pre-objective, rendering transcendental reflection strictly independent of any application of the scientific method. (Gardner, 2015: 319)

The idea here is that considerations of psychological science might serve the instrumental role of ridding transcendental philosophy of its intellectualist pretensions, but that transcendental reflection proper gets underway only after this labor is done with and then within an autonomous domain indifferent to the scientific. On this point, then, Merleau-Ponty appears to be fully in line with his transcendentalist predecessors. "Merleau-Ponty," Gardner says, "provides […] many statements of how the conditions that his phenomenology uncovers are intended to be in the true and genuine sense transcendental, i.e., *a priori* and necessary, and non-identical with empirical, contingent, or mundane states of affairs" (2015: 300). A legitimate question here, however, is how it is possible for transcendental philosophy to be

for an Integrationist View of naturalized phenomenology to provide some reasons for rejecting such a description.

both *reformed* by (ibid.: 319) and "strictly independent of" considerations from scientific psychology. Can one really have both?

Gardner's insistence on a strict independence of the transcendental from the scientific seems to stem from a specific conception of what a mutually enlightening relation between them would have to amount to. According to him, naturalized interpretations of Merleau-Ponty's project will not only have the consequence that his philosophy can "become subject […] to empirical correction" but also that "the task of explanation […] tends inevitably to pass out of the hands of phenomenology into neurophysiology and other more empirically tough-minded quarters" (2015: 297). In other words, it would ultimately amount to an unequivocal abandonment of transcendental philosophy in favor of an all-encompassing scientific naturalism, where all legitimate questions are seen as answerable by the methods of natural science. There surely are those who advocate this form of 'naturalized phenomenology.'[114] We find a prime example in the introduction to the anthology *Naturalized Phenomenology*, where the editors explicitly state that "naturalized" here means "integrated into an explanatory framework where every acceptable property is made continuous with the properties admitted by the natural sciences" (Roy et al., 1999: 1–2). Now, if this is what one means by naturalization, and one by 'phenomenology' refers to the philosophical tradition of Husserl and Merleau-Ponty, then the notion of a naturalized phenomenology is an impossibility – a category mistake (Zahavi, 2013: 30). After all, phenomenology thus conceived would have to partake without question in the 'natural attitude' or 'objective thought,' giving up on its defining task of clarifying the constitution and/or origin of objectivity and thus ceasing to be phenomenology altogether.

That being said, the choice Gardner seems to presuppose between, on the one hand, a transcendental philosophy indifferent to the results of science and, on the other, a naturalistic philosophy that yields all authority to such findings is a false dichotomy. As Zahavi (2013, 2017) suggests, there seem to be at least two alternative conceptions of what a naturalized phenomenology can amount to available. Below I present these, arguing that we should favor the alternative I label the integrationist view over the more conservative Modest transcendentalism before I, in the remainder of this text, propose a reading of Merleau-Ponty's philosophy as an instance of the former.

[114] Although I doubt Gardner's (2015: 297) prime examples of psychological interpreters of Merleau-Ponty – Hubert Dreyfus, Shaun Gallagher, and Sean Kelly – would fit easily into that category.

9.3 From modest transcendentalism to the integrationist view

While Zahavi on multiple occasions has raised concerns over 'naturalizing' approaches to phenomenology from a transcendentalist perspective (2004; 2010; 2011; 2013; 2017), he is simultaneously one of our contemporary phenomenological philosophers that has done most to facilitate and engage in fruitful dialogs with psychological science. It is thus not surprising that we in his writings find suggestions for conceptions of naturalized phenomenology where the philosophical or transcendental core of phenomenology is maintained. Zahavi tends to point to two such alternatives. The first keeps the idea of phenomenology as transcendental philosophy where 'transcendental' entails belonging to a domain strictly separate from the natural and scientific but is more liberal than Gardner's view in that it, nonetheless, allows for some form of mutual enlightenment between the two domains (2017: 162–163). The second alternative is based on rethinking the very notions of the 'transcendental' and the 'natural' as traditionally conceived, pushing for a tighter integration of phenomenology and science within the framework of a "phenomenologized nature" (2017: 167). I call these 'modest transcendentalism' (MT) and the 'integrationist view' (IV), respectively.

Zahavi makes it clear that he is sympathetic to both alternatives and emphasizes that they "should not be seen as incompatible alternatives between which we have to choose" but that "they might be pursued simultaneously" (2017: 169). He argues convincingly that Husserl, despite his anti-naturalist reputation, subscribed to MT and suggests that he might even have accepted the more radical IV (2017: 168). Thus, although I, in the following, use Zahavi's reading of Husserl as representative of MT, I do not assume either of them to be unequivocally committed to this view. I will, however, dispute Zahavi on one account: his compatibility claim quoted above, which he makes without elaboration. How can the two alternatives be compatible? After all, IV aims to unsettle a core pillar of MT's framework, namely, the separation of the transcendental from the natural. As long as this is what defines the difference between the two alternatives, it seems that we *do* have to choose between them. If that is right, I believe that IV has the stronger case. The reason for this is that, when pressed to make adequate sense of the relationship it sets up between phenomenology and science, MT seems to have difficulties preserving the traditional transcendental–natural distinction it presumably subscribes to and to inadvertently and implicitly collapse into a view more like IV. In other words, my argument in what follows is that IV is best suited to give weight to and make coherent the productive exchange between philosophical and scientific perspectives envisioned by MT.

What does the exchange between phenomenology and science consist in for MT? Zahavi suggests the following:

> Phenomenology can question and elucidate basic theoretical assumptions made by empirical science, just as it might aid in the development of new experimental paradigms. Empirical science can present phenomenology with concrete findings that it cannot simply ignore, but must be able to accommodate (2017: 162).

Through its eidetic analyses of consciousness, phenomenology yields descriptions and theories of phenomena such as perception, imagination, embodiment, etc., which can serve as basis for engaging critically with scientists' assumptions regarding the same phenomena.[115] Notice that we, in the quote's second sentence, find a clear contrast to the view offered by Gardner's Transcendental Interpretation of Merleau-Ponty, which, remember, rejects the idea of science as "an independent source of knowledge that philosophy ought to accommodate" (2015: 319). The question now is, how does this relationship suggested by MT square with the idea that phenomenology and science belong to two essentially separate domains? That is, *in virtue of what* is phenomenology justified as having a say concerning scientific theory, and empirical findings an impact on phenomenology?

MT's first response is that we here are not yet talking about *transcendental* phenomenology. Zahavi reminds us of Husserl's view that "to engage in an eidetic and *a priori* analysis of experiential consciousness is to do psychology – and not yet phenomenology proper" (2017: 157). MT's commitment to a separation of the transcendental and the scientific together with its opening for a relationship of mutual enlightenment between phenomenology and science thus seems to rest upon a distinction between two forms of phenomenology: *transcendental* and *psychological*. Here, the latter is understood as remaining within the natural attitude, studying consciousness for its own sake in a non-reductive way, whereas the former is interested in consciousness "insofar as [it] is taken to be a condition of possibility for meaning, truth, validity, and manifestation" (ibid.). At this point, it can seem as if MT's solution to how phenomenology and science can cooperate is simply to define phenomenology in this context as a non-transcendental enterprise. If that were the case, it would arguably not be a solution as much as a case of moving the goalposts. What we are after is, after all, a way to naturalize phenomenology that does not simply neglect or erase its philosophical credentials.

[115] Gallagher's (2003) idea of "front-loading" phenomenology is a good illustration of how phenomenology can also be used to inform experimental settings.

MT avoids this objection by pointing to the intimate connection between transcendental and psychological phenomenology, making the latter more of a mediator than a substitute for the former in the envisioned phenomenology-science exchange. Although different from transcendental phenomenology in that it remains within the natural attitude, investigating consciousness as a region of the objective world rather than as a condition of possibility for that world, phenomenological psychology has the potential to *lead to* transcendental phenomenology if pursued in a radical and precise enough manner (ibid.: 157). In approaching a comprehensive understanding of consciousness as nonreduced phenomenon, phenomenological psychology will eventually be prompted to acknowledge consciousness' transcendental significance. In other words, it seems that the line between psychological and transcendental approaches to consciousness is not so easy to draw after all. On the contrary, on this view, "psychology qua the study of consciousness *contains a transcendental dimension* and is ultimately *part of* transcendental philosophy" (Zahavi, 2017: 159; my emphases). This connection between the transcendental and the psychological is also acknowledged by Merleau-Ponty, who states that "the transcendental attitude is already implied in the psychologist's descriptions" (2012: 60), even going so far as to label the relationship one of "interpenetration" and "mutual envelopment" (1964: 73). The question for MT, however, is how it can subscribe to this way of understanding the relationship between phenomenology and science without sacrificing any of its other commitments. That is, while the transcendental–psychological connection sketched here surely makes more sense of the possibility of mutual enlightenment between transcendental phenomenology and science, it simultaneously hints at a diffusion of the border between the two – a border MT is supposed to leave unquestioned. What does it mean to let "the very conceptions of naturalism and transcendental analysis remain unaffected" (Zahavi, 2017: 163) in light of these considerations?

This tension seems to only become more pressing upon further interrogation of this view. Let me draw attention to three points that illustrate this, and which I believe pull MT closer to IV. First, a possible objection to the view that a productive exchange between phenomenology and science is possible is that there is a mismatch between the *a priori* status of transcendental reflection and the *a posteriori* nature of empirical findings. How can *a priori* insights inform *a posteriori* sciences, or vice versa? Zahavi responds to this by drawing attention to Husserl's view that *a priori* phenomenological insights are not immune to corrections in light of new evidence, but rather "always possess a certain provisionality, a certain presumptiveness" (2017: 155). "Our *a priori* knowledge," he elaborates, "is, in short, fallible; if we come across putative empirical counterexamples to our alleged eidetic insights,

they need to be taken seriously and cannot simply be dismissed as irrelevant" (ibid.). What we have here, then, is a view of the phenomenological *a priori* not only as fallible but as potentially challengeable by empirical findings. Now, this idea of revisable transcendental insights is prepared already by what we saw in the previous section regarding the regressive nature of phenomenological transcendentalism. After all, if the task is to start from actual experiences and clarify their constitutive structures, then discoveries that prompt revisions of one's earlier articulations are always a possibility. Still, it is not clear how scientific findings can work as counterexamples to eidetic insights on MT's model.

Second, it is important to note that while the prime example of science in MT's model of phenomenology-science cooperation is phenomenological psychology, which is concerned with a non-reductive understanding of consciousness and takes first-person experience as its point of departure (Zahavi, 2017: 157, 159), this does not mean that 'empirical findings' in this context are limited to descriptions of first-personal consciousness as such. Among the empirical sciences that Zahavi mentions as most promising for engaging in productive exchange with phenomenology, we find disciplines such as anthropology, psychopathology, and developmental psychology (2017: 152) – all of which, notwithstanding their non-reductive, person-directed nature, at least in part rely on third-personal observations of bodily behavior and its worldly (material and cultural) conditions. Hence, if it is right that findings in these domains "might be taken up by, and consequently influence or constrain, an analysis of transcendental subjectivity" (ibid:159–160), we need a way to make sense of how third-person perspectives can play this role.

Third, for this transcendental–psychological exchange to work, one must at least admit that the two domains are dealing with subject matters that are closely enough related for them to be relevant to each other. This is staunchly rejected by Gardner, who insists on an "absolute, non-epistemological distinction" between the phenomenal and the objective body (2015: 298). This distinction, however, seems to be put into question by Zahavi's Husserl-inspired MT:

> the relation between the transcendental subject and the empirical subject is for Husserl not a relation between two different subjects, but between two different self-apprehensions. The transcendental subject and the empirical subject are but one subject, though viewed from different perspectives. The transcendental subject is the subject in its primary constitutive function. The empirical subject is the same subject, but now apprehended and interpreted as an object in the world. (2017: 158)

According to MT, then, the separate domains of phenomenology and psychological science are just two different ways of approaching the same subject. While this undoubtedly helps make sense of the relation between the transcendental and the psychological sketched above, it also seems to call for a philosophical framework beyond what MT offers. That is, how can a proposal in which "nothing […] entails or necessitates the need for a more fundamental rethinking of the relation between the constituting and the constituted" (ibid: 163) make room for the idea that the (constituted) empirical subject is the *same* as the (constituting) transcendental subject?[116] One would think that, without a fundamental rethinking of this relation, the two subjects could *not* be the same, since they would always find themselves at opposite poles of the constitutive correlation. At the very least, the idea of identity between the two subjects would not represent the solution to a problem as much as a problem in itself, as Husserl acknowledged when he in *The Crisis of the European Sciences and Transcendental Phenomenology* described what he called "the paradox of subjectivity": "The difference between empirical and transcendental subjectivity remained unavoidable; yet just as unavoidable, but also incomprehensible, was their identity. I myself, as transcendental ego, 'constitute' the world, and at the same time, as soul, I am a human ego in the world" (1970: 202).[117] In that work, Husserl's way out of the paradox seems to have been, in Anthony Fernandez' words, "a complete dehumanizing and decontextualizing of the transcendental ego" (2015: 294), thus ultimately denying the identity between the empirical and transcendental subject after all. "In the epoché and in the pure focus upon the functioning ego-pole […]," Husserl says, "*nothing human is to be found*, neither soul nor psychic life nor real psychophysical human beings; all this belongs to the 'phenomenon,' to the world as constituted pole" (1970: 183; my emphasis). I am not saying that MT necessarily is committed to accepting this consequence, but it surely highlights the difficulty of stating the identity of the transcendental and empirical subject within this more conservative transcendentalist position.

Putting together the above considerations, we get a view that says that scientific approaches to consciousness have a transcendental dimension, that *a priori* transcendental analyses are vulnerable to change in light of third-personal empirical evidence, and that the transcendental and empirical subject ultimately is the *same* subject. As we have seen, these

[116] Compare the quote here to Zahavi's claim in a different text, that "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: 15). It is outside the scope of this paper to explore whether such a modification is compatible with refraining from "a fundamental rethinking," but there at least seems to be a tension at the surface here.
[117] See, e.g., The Paradox of Subjectivity (Carr, 1999).

features of MT seem to put pressure on its commitment to preserve the classical notions of 'transcendental' and 'natural.' What is missing here seems to be precisely what is offered by our second alternative, IV: a model of how the transcendental and empirical aspects of consciousness are *integrated*, so as to make adequate sense of a mutually enlightening relationship between phenomenology proper and science.

As mentioned, one central feature of this view is the aim to rethink the concept of nature in a 'phenomenologized' fashion. Of course, 'nature' never had a clear and uncontroversial meaning in the first place, so what concept is it more specifically that we are asked to rethink here? Briefly put,[118] it is the *objectivist* concept, which neglects that objects are always accessed by a subject and moreover eliminates anything that is assumed to be mere 'products' of human subjectivity (meaning, quality, normativity, etc.) from its picture of the real.[119] While classical transcendentalism tends to be critical of 'expansionist' forms of objectivism that purports to shape all forms of thought in its own image, it has generally left objectivist naturalism untouched insofar as it is understood to be a necessary presupposition for the sciences. The assumption that all of natural science is committed to such a position is at least part of the reason for transcendental phenomenologists' long-standing insistence on operating in an autonomous intellectual domain. IV, in contrast, calls for an uprooting of this view of nature altogether, toward one able to incorporate consciousness' transcendental status and the reality of phenomena such as subjectivity, meaning, and normativity. Zahavi points to Evan Thompson's *Mind in Life* (2007) as the "currently most comprehensive attempt" at developing such a view (2017: 164). In his own words, Thompson's project starts from "a recognition of the transcendental and hence ineliminable status of experience" and aims toward "a different kind of approach to matter, life, and mind from objectivism and reductionism" (2007: 87). Central to this approach is the thesis that there is a *deep continuity* pertaining to the organizational structures of mind and life (2007: 128–129).[120]

This leads directly to IV's second defining trait – the transformation of transcendental philosophy from an isolated to a more pluralistic and cooperative enterprise. Where IV's rethinking of nature consists in making room for the constitutive organization of structures of

[118] A lot can be – and have been – said about the notions of 'nature' and 'naturalism' in the context of naturalizing phenomenology. Here, I'm I am limiting myself to a simplified definition, but see, e.g., Vanzago (2012); Roux (2013), and Reynolds (2017) for more thorough discussions.
[119] As Zahavi (2013: 33) has noted, replacing physicalist/reductionist naturalism with an "emergentist" version alone is not sufficient to ease phenomenology's relation to naturalism, for the latter might still be committed to objectivism.
[120] "Mind is life-like and life is mind-like," as he puts it (ibid.: 128).

meaning and subjectivity as natural phenomena, its rethinking of the transcendental consists in understanding transcendental reflection as *part of* and directed at nature thus conceived. To make this more concrete, consider how *embodiment* is both a transcendental condition for our openness to the world and entails biological existence. (As such, it is a crystallization of the paradox of subjectivity). From a more traditional perspective, the transcendental and the biological would seem to be completely unrelated. IV's conceptual transformations, however, hold the promise of a comprehensive ontology upon which these might be seen as mutually enlightening and constraining perspectives. Zahavi's presentation of this trait of IV seems to point in the same direction. For instance, he cites the suggestion of Roy et al. (1999: 61) that "Husserl's and Merleau-Ponty's investigations of the lived body focus on a locus where '*a transcendental analysis and a natural account are intrinsically joined*'" (2017: 164; orig. emphasis). Furthermore, he draws attention to Merleau-Ponty's call for us to "search for a dimension that is beyond both objectivism and subjectivism" where we would not have to "choose between an external scientific explanation or an internal phenomenological reflection" (ibid: 165). This dimension, I will try to show below, is in Merleau-Ponty's first works illuminated through the notion of structures of behavior and – pace Gardner – the pre-objective perceptual field. As we will see, this rethinking of transcendental philosophy comes with two significant adjustments relative to its previous form: a step away from first-personal phenomenology, in the sense that the constitution of givenness is no longer an act that is manifest only to the subject of the given, and a recognition of the significance of contingency for its project.

In the remainder of this paper, I will try to show how Merleau-Ponty, despite Gardner's claims to the contrary, offers a promising starting point for developing the IV.[121] An important reason for why this is not noticed in Gardner's reading is that it overlooks two key (and interrelated) factors: (1) the significance of the ontology of *structure* developed in *Structure* for understanding Merleau-Ponty's overall project[122] and (2) how Merleau-Ponty in *Phenomenology* limits and transforms transcendental philosophy with his understanding of the

[121] "If the promised synthesis of transcendentalism and naturalism could be made plausible independently—no mean feat—then it would furnish the basis for a reconstructive interpretation of Merleau-Ponty, but it is not in Merleau-Ponty's own line of sight" (Gardner, 2015: 318).
[122] Admittedly, Gardner does mention the continuity between *Structure* and *Phenomenology* as something that supports the Psychological Interpretation he argues against (2015: 296). However, he seems to think that this continuity is only apparent, and limits his attention to *Structure* to a couple of brief remarks describing it as a work of "holist, anti-reductionist thought […] much of which reads like a philosophy of psychology" (ibid.).

phenomenological method. In the next section, I elaborate on the first of these, before I move on to discuss Merleau-Ponty's methodology in section 5.

9.4 Rethinking nature: structures of behavior[123]

What is the 'ontology of structure?' Most generally, it is a view of consciousness as an *embodied* and *expressive* mode of existence that is ontologically prior to the subject-object dichotomy. As Merleau-Ponty puts it in *Structure*'s preface,

> taken in itself, [the notion of behavior] is neutral with respect to the classical distinctions between the 'mental' and the 'physiological' and thus can give us the opportunity of defining them anew. […] By going through behaviorism […] one gains at least in being able to introduce consciousness, not as psychological reality or as cause, but as *structure*. (1963: 4–5; my emphasis)

The most important implication of this view for our purposes is that neither the third-person approach of science nor the first-person approach of transcendental phenomenology alone can claim privileged access to the being of consciousness. How does this follow? While I will not be able to give a full account of Merleau-Ponty's ontology of structure here, I will point to a couple of key elements that motivate this conclusion. Let us start by considering a claim Merleau-Ponty makes with regard to what he calls "vital forms," the kind of structure of behavior paradigmatic of non-human animals:[124]

> the reactions of an organism are understandable and predictable only if we conceive of them, not as muscular contractions which unfold in the body, but as acts which are addressed to a certain milieu, present or virtual: the act of taking a bait, of walking toward a goal, of running away from danger. (1963: 151)

[123] Kee (2020) too draws attention to the significance of *Structure* for the project of naturalizing phenomenology. As far as I can see, our approaches are largely aligned, although our emphases are somewhat different. One of Kee's key claims is that a phenomenological reduction is undertaken already in *Structure*'s engagement with psychological considerations, which prompts a shift of attention toward organisms' perceived world. I do not dispute this, but—as we we'll see toward the end of this section—I will argue that a more explicit turn toward (transcendental) phenomenology is motivated by a tension that crystallizes toward the end of *Structure*, and that this is what sets the stage for the *Phenomenology*'s project.

[124] For the sake of simplicity, I'll use vital forms to represent the notion of structures of behavior here. It is, however, important to be aware that Merleau-Ponty locates human behavior at a different level of organization from that of non-human animals. In short, human behavior is not merely oriented with regards to vital/biological needs, but is situated within and directed toward an *intersubjective* world with symbolic significances.

Trivial as it may seem, this observation is of crucial philosophical importance, in the sense that it is a clear illustration of the above-mentioned diffusion of the dichotomy between the subjective and objective. What it says is that, even when approached from a third-person perspective, the behavior of living organisms is expressive of what we might call a 'subjective dimension,' in the form of displaying a relationship to the world as significant *for* the organism in question. Put differently, Merleau-Ponty is here describing a phenomenon where the 'internal' (significances *for* the organism) is expressed in the 'external' (observable behavior). The 'subjective' or 'internal' as understood here is thus not some kind of 'extra' feature added upon purely objective movements; it is their structure, or *form*, and as such, as I will say more about soon, it is integrated with its 'parts' in a relationship of co-determinacy. At its core, the ontology of structure is the view that this embodied-expressive *integration* of subjectivity and objectivity (or the first- and third-person) is consciousness' primordial mode of existence and hence the ground from which the notions of the mental and the physiological are abstracted.[125]

Now, admittedly, the claim in the above quote is not so much ontological as it is epistemological, i.e., it is telling us how organisms' behavior must be *conceived* in order to be understandable, rather than establishing that organisms ultimately *are* one way rather than another. Here, then, we are confronted with a challenge to my claim above that the subjectivity exhibited by organisms' behavior is not an additional, separable feature – for, can it not be the case that the 'sense' we see in living behavior is merely a result of our projections as observers?[126] This challenge is a decisive moment in the dialectic toward IV, motivating, as it does, a return to the position of the philosopher or scientist *qua* the subject seeking to understand consciousness' place in nature: Can it not be the case that the sense displayed in the behavior of living organisms is merely the result of *our mode of understanding or perceiving*,

[125] To avoid any misunderstanding, let me emphasize that the acknowledgment of an "internal" dimension of behavior here means that we, despite the focus on behavior, are going beyond traditional (objectivist) behaviorism. Merleau-Ponty's point in the above quote is that the objectivist stimulus—response approach of behaviorism—which neglects, as Kee puts it, "the perceived world of the animal itself," thus failing to recognize "behavior and situation as *internally* related structures with a unique logic" (2020: 19)—is unable to adequately understand behavior.

[126] Let me note, without being able to argue extensively for it here, that a concession to such a separation between epistemology and ontology is problematic, in the sense that it ultimately leads to an unsustainable skepticism. For someone who challenges the epistemology-ontology separation, see, e.g., Bhaskar (1978: 36-45) or Taylor (1997). Although it is not explicitly addressed in the main text, the claim that there is a sort of meaning *for* living organisms as well as immanent *in* their behavior, is in effect a subscription to teleological view of life. Thus, the epistemological challenge here can be more specifically framed as one of teleonomy (living organisms behave/must be understood as if purposive) vs. teleology (living organisms *are* immanently purposive). See Weber and Varela (2002) for an informative overview of this issue as well as an argument in favor of the latter position.

and not something that is 'really there,' in nature? This is the cue for the transcendental philosopher to step onto the stage: the focus has now shifted from the nature of mind and life to how the phenomena of structures of behavior – in this context, vital forms – are constituted as phenomena *for* consciousness. The perspective on consciousness we have entertained so far in this section has been *transcendentally naïve* – it has been that of an 'external spectator' leaving its own status as spectator unquestioned. As many, including Merleau-Ponty himself, have noted, this is the perspective from which most of *Structure* is written; only toward the end of that book do we see a shift begin to take place toward a 'transcendental' perspective.[127] Let us, however, leave the execution of this shift on hold for a moment, while we let the naive spectator provide us with some more flesh on the bone of the ontology of structure.

The ontology of structure consists in taking the organism as a whole, in its dynamic interactions with its environment, as an irreducible unit of nature. Irreducible, because the existence and function of any part of this unit (such as physiological features) depends on it being a part of this greater whole, just as the whole in turn depends for *its* existence on the existence and functioning of its parts. As such, structures of behavior are characterized by what Thompson labels "dynamic co-emergence," meaning "that a whole not only arises from its parts, but the parts also arise from the whole. Part and whole co-emerge and mutually specify each other" (2007: 38). While this sort of part–whole relationship can be found also in some non-living physical structures, the structure of living beings is further characterized by having an equilibrium that depends upon "virtual" conditions – that is, conditions produced by the organism itself, and which hence do not exist independently of it (Merleau-Ponty, 1963: 145). In Thompson's terminology, living organisms are *autonomous systems* (2007: 37) – systems that themselves generate and maintain the processes necessary for continuing their existence as such. As a concrete case in point, consider the way in which your existence, as a bodily being, is generated by metabolic processes that in turn are maintained only insofar as you interact with your surroundings in a certain way – seeking food when you're hungry, safety when you're scared, and so on. Neither these vital significances of your external world ('food,' 'safety') nor the metabolic processes of your cells are things that can exist independently of you as a holistic structure of behavior – they are brought forth by this structure while simultaneously being among the conditions necessary for the maintenance of the same structure.

[127] For instance, in one of *Phenomenology*'s footnotes, he distinguishes *Structure* as concerned with consciousness "seen from the outside" from *Phenomenology* as concerned with consciousness "seen from within" (2012: 535n18).

There are two main reasons for why these points regarding the autonomous and dynamic co-emergent nature of structures of behavior are important for our purposes. First, they provide us with a helpful framework for making sense of what I earlier called the 'subjective dimension' of living structures. Second, they enable us to see how consciousness, qua dynamically co-emergent structure, is *vulnerable and contingent* – a point that is key to understanding how IV sees the relationship between phenomenology and empirical science.

Starting with the first of these, consider how the notion of autonomous systems accounts for the existence of the three interrelated phenomena of (1) selfhood or individuality, (2) a world or environment with a certain relevance or sense *for* the system, and (3) normativity concerning the system's state and interactions.[128] Through generating and maintaining itself, the system produces itself *as* self or individual by distinguishing itself from its surroundings. By way of the same process, the surroundings gain a sense or relevance for the system in light of its project of self-generation and self-maintenance. Given that a certain functioning both of the system's internal organization and of its interactions with its surroundings are of literally existential significance, the emergence of autonomous systems is simultaneously the emergence of a form of normativity pertaining to the system in question; certain states and interactions are more *preferable* than others for the organism in light of its project to keep on existing. In short, a living organism's structure of behavior is expressive of a network of relations (of dependence, interests, understanding, etc.) between the organism as individual and its environment, brought forth by and meaningful in light of the self-concern of the organism as a whole. This is what accounts for the 'subjective dimension,' or form, of living organisms' behavior.

As hinted above, a crucial consequence of this view is that it amounts to what we might call a 'de-privatization' of consciousness. That is, as understood here, consciousness resides in embodied-expressive behavior and is as such not exhausted by its first-person access to itself but is publicly available. This view is expressed by Thompson when he says that

> [t]he intentional arc and being-in-the-world overall are neither purely first-personal (subjective) nor purely third-personal (objective), neither mental nor physical. They are existential structures prior to and more fundamental than these abstractions (2007: 248).

"The intentional arc" denotes the network of relations between the living organism (or subject) and its world or, in other words, the ways in which the former is situated in and directed toward

[128] Roughly the same points can be found in Thompson (2007: 73–74).

the latter. To conceive of the intentional arc as an existential structure is to give up on the idea of consciousness as an essentially 'inner' mode of being. "The mental," as Merleau-Ponty puts it in *Structure*, "is reducible to the structure of behavior" and "[s]ince this structure is visible from the outside and for the spectator at the same time as from within and for the actor, another person is in principle accessible to me as I am to myself" (1963: 221–222). This view is carried on even after the shift from *Structure*'s 'spectator perspective' to *Phenomenology*'s 'internal' study of consciousness, where Merleau-Ponty already in the preface echoes the citation from *Structure* in stating that

> I must be my exterior, and the other's body must be the other person himself. […] my existence must never reduce itself to the consciousness that I have of existing; it must in fact encompass the consciousness that one might have of it, and so also encompass my embodiment in a nature and at least the possibility of an historical situation. (2012, lxxvi)

In other words, my existence as consciousness is not limited to my first-person perspective but extends beyond it. Importantly, this should not be understood as an elimination of first-personal experience or a rejection of the idea that each individual enjoys a special sort of access to his or her lived experience that is unavailable as such to others. The point is that my reality as subject exceeds what I can grasp through my own perspective upon myself, which means that I am not the sole authority when it comes to understanding my own existence. This de-privatization of consciousness suggests a rethinking of transcendental philosophy, which will be further explored in the next section: If the transcendental is the structural organization in virtue of which stuff appears to consciousness in the first place, and consciousness is an existential structure not exhausted by the first-person but visible from 'the outside,' then it seems plausible that transcendental reflection must incorporate this 'external' view upon consciousness in order to be adequate.

The second reason mentioned above, concerning the contingency and vulnerability of structures, points in the same direction. If consciousness is an existential and bodily structure characterized by a relation of dynamic co-emergence between parts and whole, there seems to be little room for the traditional transcendental trait of *a priori* necessity in its organization. On the contrary, being dependent on the proper functioning of its parts for the maintenance of its mode of existence, the structure of consciousness seems to be susceptible to significant reorganizations in reaction to empirical events. Consider, for instance, the case of pathology. It is tempting to understand pathological subjects on the model of a 'normal' human way of being, thematizing the illness as a lack or distortion of individual features or capacities relative

to this standard. As we will see in the last section of this paper, however, pathology is better understood if we acknowledge that illness, as Merleau-Ponty puts it, "is a complete form of existence" (2012: 110). As such, pathology is not so much a case of absent or disturbed particularities relative to an otherwise intact 'normal' structure, as it is a different way of existing altogether, a novel, albeit disintegrated, way of being situated in and directed toward the world.[129]

The takeaway for now is this: Considered as existential structure, consciousness is both 'de-privatized' and fundamentally contingent. Both of these seem to suggest that there is an important role for empirical science to play together with phenomenology in illuminating the structures of consciousness. After all, empirical perspectives are required in order to adequately grasp the contingencies of our embodied existence, describing, for instance, how humans' way of relating to the world is affected by bodily injury and traumatic experiences, or what role empirical matters play in childhood development. The question, however, is whether the above reflections have any bearing on the transcendentalist challenge to naturalized phenomenology.

While I think that the ontology of structure in the end will prove to offer what MT lacks (i.e., a framework for understanding how the transcendental subject and the empirical subject can be the *same* subject approached from different perspectives), I am not under the illusion of having convinced the transcendental philosopher yet. After all, recall that the conception of consciousness as structure of behavior that has hitherto been developed is based on the transcendentally naive perspective of an 'outside spectator' taking for granted the way in which his or her access to phenomena is constituted or achieved in the first place. Even though I have been advocating a conception of consciousness as an embodied-expressive structure integrating subjectivity and objectivity, thus challenging standard 'objectivist' views of nature, this model is still that of consciousness as an *object in the world*, as a phenomenon *for me* as perceiver and thinker. What the transcendental philosopher is concerned with, remember, is not consciousness as object but rather as our *access* to objects as such. This is probably the explanation for why Gardner so quickly dismisses the significance of Merleau-Ponty's first work in the context of determining his stance toward transcendental philosophy.[130]

[129] In the words of Georges Canguillhem, "disease is not a variation on the dimension of health; it is a new dimension of life" (1978: 108). This does not mean that there are no meaningful distinctions to be made between the normal and the pathological, in the sense that the latter cannot be seen as the 'worst' of the two. The point is that what is disturbed in the pathological case is ultimately the global behavioral space of the patient, not individual psychological or physiological traits.
[130] See fn. 122.

There are, however, at least two reasons why this dismissal is too quick. First, it seems possible to argue that the above-mentioned elements of the ontology of structure are in fact relevant to the transcendental project. After all, what I have tried to outline here is a rethinking of nature[131] that acknowledges a dimension of being prior to the subject–object dichotomy, where consciousness is reconceived as essentially manifest in the grammar of behavior, and our bodily being is seen as organized toward an environment of meaning. Thus, although the ontology of structure might have its origin in a third-personal perspective, its ultimate consequence is a diffusion of the distinction between first- and third-personal perspectives – organisms' perceived, meaningful environment is exhibited in the behavior by which it is enacted and must be incorporated as such by the ('third-personal') scientist in order to be adequately understood. Since observable bodily behavior in this way expresses the constitution of an environment of meaning, it seems possible that it also bears clues of transcendental significance, disclosable by scientific perspectives. In the next section, we will see how this transcendental significance of the notion of structure is motivated also by the 'internal' perspective of the *Phenomenology*.

Second, and on a more scholarly note, Gardner seemingly ignores how Merleau-Ponty in the last pages of *Structure* sets the stage for the *Phenomenology's* transcendental project. That is, there is a tension running through *Structure* that is brought to the fore in its last chapter and which seems to be the motivation for at least some core parts of the *Phenomenology*. This tension is related to the challenge mentioned earlier, regarding the relation between the contributions of our mode of understanding and the embodied-expressive *sense* characteristic of the holistic structure of living organisms' behavior. The problem, as Toadvine notes, is that the ontology of structure is based upon how the behavior of living beings *appears* as meaningful wholes to a subject, thus giving "the impression that [it] involves a return to idealism, since every structure would have consciousness as its essential correlate" (2009: 38). We are thus confronted with the possibility that the sense we disclose in nature belongs only to nature *for us*, that it is a product of our human significations.

Merleau-Ponty's diagnosis of this problem points directly toward his project in the *Phenomenology*. What leads us toward the idealistic conclusion is that we identify structures with *significations* dependent upon our human conceptualizing capacities, thus privileging, as Toadvine puts it, "the perspective of intellectual consciousness" (ibid.) as our

[131] Admittedly not nature as a whole, but more specifically in the form of living organisms. However, as Morris (2018) has recently tried to show, this approach to the structure of life might ultimately help us toward a more fundamental rethinking of nature.

access to the world. The problem can be avoided, however, if we acknowledge that intellectual consciousness is derivative from *perceptual* consciousness, and hence "return to perception as a type of original experience in which the real world is constituted in its specificity" (Merleau-Ponty, 1963: 220). This call for a *phenomenology of perception* is made in explicit opposition to traditional, Kantian transcendental philosophy, which sets the contribution of the categories of the understanding center stage. Given that this intellectualist theory is not acceptable, Merleau-Ponty famously states on *Structure*'s very last page, "it would be necessary to define transcendental philosophy anew in such a way as to integrate with it the very phenomenon of the real" (1963: 224). Here, we have a clear formulation of the path forward for Merleau-Ponty's thought, i.e., to *redefine* transcendental philosophy in a way that does justice to the reality of structures. While the shift from intellectual to perceptual consciousness, which Gardner too acknowledges, is a crucial part of this redefinition, an equally important factor is the way in which this entails a methodological integration of phenomenology with scientific perspectives. How are we to understand this methodology?

9.5 Rethinking transcendentalism: the limits of transcendental reflection

The *Phenomenology* immediately picks up the thread from *Structure*, addressing the nature of the methodology that is to be employed in its "return to perception." Thus Merleau-Ponty starts, in the very first sentence, with the question "What is phenomenology?" (2012: lxx). According to Gardner, Merleau-Ponty in his response "*avows a commitment to* phenomenology conceived as 'a study of essences,' 'a transcendental philosophy,' 'a rejection of science"' (2015: 304; my emphasis), thus confirming his own transcendentalist reading. Looking at what Merleau-Ponty is actually saying in the relevant passage, however, this is a far too strong claim, highlighting only one side of what is really presented as *tensions* found within phenomenology. That is, the claim that phenomenology "is the study of essences" is immediately followed by the qualification that "yet [it] also places essences back within existence and thinks that the only way to understand man and the world is by beginning from their 'facticity"' (2012: lxx). Furthermore, while phenomenology is "a transcendental philosophy […] *it is also* a philosophy for which the world is always 'already there' prior to reflection" (ibid.; my emphasis). Lastly, after stating that phenomenology attempts to describe experience "such as it is, without any consideration of its psychological genesis or of the causal explanations that the scientist […]

might offer of that experience," Merleau-Ponty points out that in the last works of Husserl one also finds the notion of a "genetic phenomenology" (ibid.). Ending the paragraph by referring to these as "contradictions,"[132] it is clear that he is here not *avowing a commitment* to a specific conception of phenomenology as much as he is, as Reynolds puts it, acknowledging "a constitutive methodological disunity at the heart of phenomenology" (2017: 87). Rather than providing an answer to the initial question, then, Merleau-Ponty is here offering a further elaboration of the *difficulty* of providing such an answer.

Given the significance of this "methodological disunity" for understanding the nature of Merleau-Ponty's project, it is surprising that the question of the phenomenological method is not addressed at all in Gardner's paper.[133] If Merleau-Ponty is a transcendental philosopher, then by what means does he access the transcendental domain? Here, his claim, which we briefly touched upon in section 2, that "the most important lesson of the reduction is the impossibility of a complete reduction" (2012: lxxvii) becomes relevant. What does it mean?

The way to make sense of this at first glance enigmatic statement is to see it as signaling an immanent critique of transcendental philosophy, in the sense that it represents a case of turning transcendental reflection against itself. That is, starting from the position of the transcendental philosopher aiming to fully grasp the constitutive structures of the world's presence for consciousness, we discover a resistance to our endeavor that ultimately turns out to be an unsurpassable limitation for our project, namely, the fact that we are situated and inextricably involved in a world in ways that can never be exhaustively conceptualized. This, in short, is the fact of embodiment, the concrete, perspectival nature of our existence that makes presence always come at the expense of a certain absence, most simply exemplified by how the visual presence of objects is characterized by the absence of the sides not facing us. The general point here is that, due to our situated, bodily nature, any act of bringing something into view, of achieving presence, or of thematization, is enabled by a background that is 'out of view,' absent, or unthematized. From our position as transcendental philosophers, this is obviously a problem: It entails that our reflection, which aims to illuminate the enabling conditions of experience, itself depends upon conditions that it *cannot* fully thematize.

[132] "Might one hope to remove these contradictions by distinguishing between the phenomenologies of Husserl and Heidegger?" (2012: lxx). See Zahavi (2008) for a closer discussion of these remarks from the *Phenomenology*'s preface.

[133] As far as I can see, Gardner (2015) mentions the phenomenological method only twice, first in the context of presenting the Psychological Interpretation (p. 296), and later (p. 304) when interpreting a claim Merleau-Ponty makes in *The Visible and the Invisible* (1968). He does, however, never discuss or clarify what he takes this method to be.

In other words, what we learn from the reduction is, negatively, that the presence of the world *resists* our attempt to reduce it to something that can be exhaustively thematized in acts of reflection and, positively, that consciousness is characterized by a primordial and inescapable bond to the world, which is presupposed by all of our more intellectual mental activities. Thus, the impossibility of a complete reduction has implications for our understanding of both the methodological status of phenomenology as well as the ontological status of consciousness.

First, note that the assumption that a complete reduction is *possible* itself rests upon an unquestioned, naive presupposition, namely, that of a subject enjoying full reflective access to the structures constitutive of its openness to the world. Furthermore, the thought that the execution of the *epoché* can provide this sort of access seems committed to the belief that the meaningful presence of the world is reducible to a meaning for consciousness *qua* reflecting subject. Thus conceived, the phenomenological reduction would, as Merleau-Ponty remarks, "be idealist, in the sense of a transcendental idealism that […] strips the world of its opacity and its transcendence" (2012: lxxv). This description, I think, fits the sort of idealism – which mistakes perceived form for intellectual significance – that was at the root of *Structure*'s tension concerning the ontology of structure. What we are seeing here, then, is an internal critique of that view: Taking the possibility of its own project for granted, transcendental reflection's search for the presuppositions of experience is blind to *its own* presuppositions. In other words, it neglects that we are not constantly reflecting subjects, but that reflection has a *beginning*, and as such is "a genuine creation, a change in the structure of consciousness […]" (ibid.: lxxiii). The task thus becomes one of uncovering the origin of reflection and the unreflective ground from which it arises.

This is the task of what Merleau-Ponty calls "radical reflection" (ibid.: lxxviii), which, in Toadvine's words, is a reflection that "aims to take into account its own immemorial past, its pre-reflective life in nature, as the fundamental condition for its operation as reflection" (2009: 53). This, then, is the method of Merleau-Ponty's novel form of transcendental philosophy, distinguished by its aim to uncover the genesis of reflection rather than taking it for granted. How can this be done? I think Morris is on to something when he observes that "who we are as reflectors […] is a much more contingent and empirical question than the naïve [intellectualist] view would allow" (2018: 85). In order to see how that is so, consider the ontological implication of the discovery of the impossibility of a complete reduction. Leading us to recognize our inextricable entanglement with the world as embodied beings, the assessment of a complete reduction as impossible is a first step toward establishing "from the

inside" what *Structure* did "from the outside;" namely, that the being of consciousness is primordially that of an embodied structure of engagement with and situatedness within a world or environment, not fully graspable from this structure's 'subjective' point of view. This is another essential turning point in the dialectic toward the IV: The objection that the notion of consciousness as structure of behavior is transcendentally naive is here countered with the observation that the reflecting activities of transcendental philosophy *themselves presuppose the philosopher's existence as structure*. In short, just like an adequate third-person understanding of living organisms presupposes recognizing the 'subjectivity' displayed in their behavior, an adequate first-person understanding of subjectivity presupposes recognizing it as integrated in a living body's 'de-privatized' and contingent mode of existence as structure.[134]

Let us revisit the phenomenon of contingency now that we have established the connection between transcendental philosophy and structures of behavior. Transcendental philosophy, remember, usually aims to identify the necessary, constitutive structures of experience. Given what we saw in the previous section, regarding the fundamental contingency of consciousness understood as structure, can we still talk about any sort of necessity pertaining to its organization? We might, in this sense: For any mode of existence, there will be processes, structures, and features that are necessary for it to maintain its specific way of being situated in and directed toward the world *in the way that it currently is*. That is, as a dynamically co-emergent structure, every aspect of our embodied being is in some sense necessary for our holistic form of existence to remain as it is. Being dependent upon empirical contingencies and as such vulnerable to change, however, such 'necessary' features of consciousness understood as structure are necessary only in a limited, relative sense. This, I take it, is Merleau-Ponty's point when he states that

> It is impossible to distinguish in the total being of man a bodily organization that one could treat as a contingent fact and other predicates that necessarily belong to him. Everything is necessary in man, and, for example, it is not through a simple coincidence that the reasonable being is also the one who stands upright or who has opposing thumbs – the same manner of existing is expressed in both of these cases. And everything is also contingent in man in the sense that this human way of existing is not guaranteed to each human child through some essence acquired at birth […]. (2012: 174)

[134] A key point here is how our self-understanding originates in and depends upon intersubjectivity (intercorporeality), and further how aspects of the self that are unavailable through self-reflection can be made 'visible' through the other's mimetic responses to my behavior. I will unfortunately not be able to further elaborate this here.

This unorthodox conception of necessity – which refers to the constitutive, yet contingent form of embodied human existence – seems to include any detail that contributes to our total way of being in the world as such. Ultimately, if put "back into my living body" (i.e., if seen as parts of my holistic embodied-expressive existence) even "my ears, my nails, and my lungs […] will no longer appear as contingent details" because "[t]hey are not indifferent to the idea of me that others form, they contribute to my physiognomy or to my style" (2012: 455). "Physiognomy" and "style" here refer to my existence as embodied-expressive structure. Notice that this appeal to how I am present to *others* is in line with the above-mentioned de-privatization of consciousness – my existence as subject is not exhausted by my first-personal access to myself but comprises my existence as appearance in the world, available to other perspectives.

It is difficult to see how this notion of necessity we have discovered here is compatible with Gardner's claim that "the conditions that [Merleau-Ponty's] phenomenology uncovers are intended to be in the true and genuine sense transcendental, i.e., *a priori* and necessary, and non-identical with empirical, contingent, or mundane states of affairs" (2015: 300). On the contrary, what we seem to have now is an *integration* of necessity with contingency, in the sense that the 'necessity' pertaining to consciousness as structure is merely its holistic organization of contingent details on which it in turn depends.[135]

If the transcendental has now become the holistic organization of a de-privatized and contingent consciousness *qua* existential structure, then the idea of transcendental philosophy as completely indifferent to scientific matters seems hard to defend. That is, if we want to understand how reflection can arise from our existence as structure, we have to involve perspectives that can illuminate structures of our being not accessible from our point of view as self-reflecting philosophers.

Let us return to the position of the first-person phenomenologist in order to get a better grip on the task at hand. While the phenomenological reduction, as we have seen, cannot consist in a full bracketing or suspension of our attitude toward the world around us, it is nonetheless a productive undertaking in the sense that it loosens "the intentional threads that connect us to the world in order to make them appear" (2012: lxxvii). In other words, the reduction enables us to appreciate the complexity of our dependence on and directedness toward the world – the

[135] Andrew Inkpin draws attention to similar points regarding necessity in the *Phenomenology* (2017: 40). He, however, uses this (among other considerations) to conclude that Merleau-Ponty's project does not warrant the name "transcendental." While I agree that this is the right conclusion given Inkpin's criteria for what counts as transcendental philosophy, I think the historical fluidity of this notion makes it possible to rather see Merleau-Ponty as transforming the idea of the transcendental.

complexity, that is, of the intentional arc. What is thus revealed is a field of pre-objective, indeterminate, or *ambiguous* phenomena – the phenomenal, or *transcendental*, field. This field is transcendental in the sense that it is the always presupposed ground for our thoughts and reflections. As we saw in section 2, ascribing this role to a *pre-objective field* represents a significant shift from traditional transcendental philosophy. Furthermore, the pre-objective nature of the transcendental field means that, while being an enabling factor *for* reflection, it is never fully graspable by the objectifying acts *of* reflection. The word "field," says Merleau-Ponty, "signifies that reflection never has the entire world […] spread out and objectified before its gaze, that it only ever has a partial view and a limited power" (2012: 62). The reflecting subject inevitably finds herself always already situated *within* the phenomenal field, presupposing this unreflective bond in all acts of reflection, in the sense that thought only ever gets started against the background of something *unthought*. The phenomenal field, then, is fundamentally *ambiguous* or *indeterminate*, since it resists reflection's demands for determinacy and clarity by always escaping its full grasp, lending itself to an indefinite number of alternative – perhaps conflicting – acts of determination.

The task of radical reflection is to illuminate this field and the intentional arc that sustains it, with the aim to understand how reflection emerges in the first place. What is clear from what we have seen above is that a philosopher's reflections alone are not up for this job. Given the complexity of the intentional arc, which "ensures that we are situated within […] our past, our future, our human milieu, our physical situation, our ideological situation, and our moral situation" (Merleau-Ponty, 2012: 137), this task is multifaceted and demands a variety of approaches. This, I think, is how we should understand the significance of Merleau-Ponty's extensive engagements with empirical science throughout his *oeuvre* – that is, as integrating these non-philosophical perspectives into his project of radical reflection. Note that this is a direct contradiction of Gardner, who reads Merleau-Ponty as ultimately reaching a purely transcendental domain, strictly independent of scientific considerations. What we have seen above, on the contrary, is that the idea of transcendental reflection as autonomous and independent from anything other than itself is doomed to neglect its own emergence as reflection and hence fail to adequately perform its task, left rather to spin in a frictionless void[136] of its own creation. As *radical*, transcendental reflection acknowledges its own limitations and seeks to incorporate a plurality of perspectives in its project of uncovering the ground for its own genesis in contingent and de-privatized existential structures of behavior.

[136] To borrow McDowell's (1994) expression.

Thus, rather than being opposed to all efforts of 'naturalization,' a genuine transcendental phenomenology rather *requires* an integration of phenomenological and scientific perspectives.[137]

'Integration' is here not meant to entail complete alignment of the transcendental with the scientific in all respects – after all, their aims are often distinct, and communication between them, while desirable, is never guaranteed. What it means is that they are in a relationship of 'interpenetration,' as Merleau-Ponty would say: Each has the potential to gain something from the other and should be pursuing this possibility given the fact of their common origin and their participation in the same pluralistic field of nature. Admittedly, this claim remains empty as long as we have not seen such an integration actualized in a concrete case. This is perhaps the most important implication of the IV: It is actualized *in* integration, in the sense that it is first in engagement with the concrete and particular that its content is adequately articulated. Thus, let us finally turn to see how Merleau-Ponty's engagement with the Schneider case is an example of Integrationist naturalized phenomenology in action.

9.6 Integration in action: the Schneider case

The scientific research that figures most extensively in the *Phenomenology* is Adhémer Gelb and Kurt Goldstein's studies of neurological pathology in World War I veterans, in particular their observations of the patient called Schneider, who had been struck by shrapnel from a mine to the back of his head, causing severe injury to his brain.[138] Although Merleau-Ponty engages with various aspects of the Schneider case throughout several chapters of the *Phenomenology*, I will here limit my discussion to Schneider's pathology as it is presented in Part 1, Chapter III, "The Spatiality of One's Body and Motricity." There, the main concern is the relation between 'abstract' and 'concrete' movements. A distinction between these forms of movements is suggested by the fact that Schneider is unable to point to areas of his body when asked to do so, although he is perfectly able to grasp or touch the same areas if those movements are called for by the immediate, concrete situation, for instance when bitten by a mosquito (2012: 106). This distinction is applicable also to another curious abnormality displayed by

[137] Reynolds makes the same point: "[Merleau-Ponty's] particular conception of transcendental philosophy […] not only is compatible with a serious and sustained engagement with empirical science but even requires it" (2017: 87).

[138] Schneider's illness was initially diagnosed as a case of visual agnosia (Goldstein and Gelb: 137), and has later been more narrowly classified as a case of "visual form agnosia" (Farah, 2004: 13). I'm indebted to Rasmus Thybo Jensen's paper on Merleau-Ponty's engagement with the Schneider case for these references (Jensen, 2009).

Schneider: Although he performs the tasks of his work without difficulty when in the actual situation of his working place, having the required instruments at hand, he is unable to *imitate* the same movements without elaborate preparations, having to, so to speak, actively 'place' his whole body virtually within the concrete situation of his working place (ibid: 112). Similarly, he is unable to move his hand into a military salute without assuming a whole military-like posture, producing the concrete situation where such a movement is called for (ibid.).

What we have here is a collection of empirical descriptions of patterns of pathological behavior that emerged after Schneider's accident. The question now is, what is the significance of these facts for phenomenological philosophy? An appealing yet ultimately too simple way to understand Merleau-Ponty's dealings with the descriptions of Schneider's pathology is that he brings a preestablished philosophical framework to bear on a concrete case, corroborating his ontology of structure by showing its supremacy over alternative ways of accounting for the facts. This way of looking at it can be motivated by reconstructing the trajectory of Merleau-Ponty's thought in the relevant chapter as follows: Revealing the shortcomings of intellectualist and empiricist explanatory strategies, which try to reduce Schneider's pathology to a malfunctioning pertaining to either the causal processes of the physiological body or to the representational capacities of the mind, Merleau-Ponty shows how Schneider's disorder can best be understood through the model of existential structures. The problem of whether to account for the disorder as *either* physiological or psychological is thus overcome through the idea of the living body as a structure of behavior: "The motor disorders in cerebellar injury cases and those of psychic blindness can only be coordinated if the background of movement and vision is defined not by a stock of sensible qualities, but by a certain manner of articulating or of structuring the surroundings" (2012: 117).

In saying that this way of rendering Merleau-Ponty's use of the Schneider case is misleading, I do not mean that it is completely false. After all, it is clear that Merleau-Ponty believes his non-reductive, phenomenological approach contributes to a better understanding of Schneider's pathology. As he says,

> Behavior can only be grasped by […] the type of thought that takes its object in its nascent state, such as it appears to him who lives it, with the atmosphere of sense by which it is enveloped, and that seeks to slip itself into this atmosphere in order to discover, behind dispersed facts and symptoms, the total being of the subject. (2012: 122)

What is misleading is the idea that the relation of enlightenment between philosophy and science here only goes one way, from the former to the latter. In order to see how it rather is a case of *mutual* enlightenment, remember first that the task of radical reflection as staked out in the previous section is to illuminate the structures of its own pre-reflective ground. Now, how can the study of Schneider's illness contribute to this project?

Consider the significance of this empirical case as a concrete example of a radical modification of the intentional arc. It is, in other words, an existence proof of the contingency of human consciousness' situatedness in and directedness toward the world and as such reveals the reality of the integration of the transcendental and empirical.[139] Schneider's brain injury initiated a process of a global restructuration of his mode of existence – his motor and cognitive capacities became organized in a new way, took on a new sense, in order to cope with the challenges arising from the damage. Since his pathology concerns his subjectivity as much as his motricity, he no longer has access to the same *phenomenal field* as normal healthy subjects. In other words, the 'necessity' of Schneider's normal human way of disclosing the world was necessary only up until the point a shrapnel hit his head.

Now, as mentioned in section 4 above, this has some important consequences for what we can learn from comparing Schneider with 'normal' subjects. As Merleau-Ponty emphasizes, "[i]t cannot be a question of simply transferring to the normal person what is missing in the patient and what he is trying to recover. Illness, like childhood […], is a complete form of existence […]" (2012: 110). Just like we cannot understand children's way of existing as an adult form with certain lacks, the relation between the normal and the pathological subject cannot be understood in terms of subtraction or addition of particular functions pertaining to an otherwise identical structure. Thus, we should not take Schneider's pathological behavior as exhibiting either the lack or the presence of particular functions that we can then infer are also present in normal subjects. If Schneider's disorder is not a case of a malfunctioning of any one particular function, but rather the manifestation of a pathological *mode of being*, then the difference between him and normal subjects must be a difference in existential structure – in their global way of engaging with the world.

On this basis, we can use the contrast between Schneider and normal subjects in order to disclose a 'transcendental' structure of organization characteristic of the latter's mode of existence. That is, in considering Schneider's inability to easily and immediately move his

[139] Fernandez makes a similar point in arguing that Schneider motivates the idea of a "contaminated transcendental": "The *a priori*, ontological structures of the world are contingent precisely because they are contaminated. And the contaminant is the world itself" (2015: 296).

body accordingly in response to instructions even though he understands them intellectually, we are able to catch a glimpse of a structural moment of our pre-reflective embodied existence that would hardly have been available through the transcendental philosopher's reflections. Since Schneider, Merleau-Ponty observes, "is missing neither motricity nor thought," but nonetheless displays this inability to perceive "motor significations," "we must acknowledge, between movement as a third person process and thought as a representation of movement, an anticipation or a grasp of the result assured by the body itself as a motor power […] or a 'motor intentionality"' (2012: 113). With this notion of motor intentionality, which is neither a purely mechanical physiological process nor an explicit first-personal thought, we have thus discovered a way to conceptualize our being as embodied structures in a way that was not available to us prior to the empirical case of Schneider's disorder.

While this might seem like a case of inferring the presence of a feature in normal cases from a lack in the pathological case, the point is on the contrary that motor intentionality has to do with the *total* organization of the normal human structure of behavior.[140] This is Merleau-Ponty's point when he argues that "'visual representations,' 'abstract movement,' and 'virtual touching' are only different names for a single central phenomenon" (2012: 120), or again, that "visual representations, tactile givens, and motricity are three phenomena cut out of the unity of behavior" (2012: 121). One way to characterize the structure of behavior of normal subjects as opposed to that of Schneider is to say, as Merleau-Ponty does, that "the normal person *reckons with* the possible, which thus acquires a sort of actuality without leaving behind its place as possibility" (2012: 112). In short, we inhabit a world that, in an important sense, is more *open* than that of Schneider, who, we can say, is 'trapped' in an environment that does not offer him the same behavioral possibilities as we have. Thus, motor intentionality – the capacity for immediate bodily grasp of significances – is in the normal case a power that

[140] Jensen (2009) points to an interesting and significant ambiguity on Merleau-Ponty's part regarding his understanding of the power of motor intentionality. That is, Schneider here seems to be used "in two mutually exclusive ways: motor intentionality is to be revealed both by its perspicuous preservation and by its contrastive impairment in one and the same case" (Jensen, 2009: 372). Does Schneider exhibit an intact normal form of motor intentionality, or is rather his illness a case of a distortion of this same function? Given the holistic approach to structures of behavior that I 've have advocated above, the idea that the *very same* power of motor intentionality is at work both in normal subjects and in Schneider must be rejected. Rather, if we are to talk about "motor intentionality" in both cases, it must be two different forms of motor intentionality—one sustaining a "normal" human organization of existence and one facilitating the maintenance of a more disintegrated, pathological mode of being. While the textual evidence for a contradiction on Merleau-Ponty's part is surely real, Jensen's conclusion that "[t]he best way to avoid the contradiction is to accentuate the differences between the concrete actions of the patient and the corresponding actions performed by the normal person […]" (2009: 387) supports this reading.

characterizes our total mode of being in the world. In other words, it sustains the *intentional arc* – which, to repeat, is what ensures our situatedness within a complex network of natural and symbolic relations, and further "creates the unity of the senses, the unity of the senses with intelligence, and the unity of sensitivity and motricity" – and it is *this*, Merleau-Ponty claims, which ultimately "'goes limp' in [Schneider's] disorder" (2012: 137).

To sum up, if Merleau-Ponty's analysis is correct, radical reflection has here made progress in uncovering some of the conditions that enable it: Motor intentionality has been established as a transcendental power integrated with contingent embodied life and discovered through engagement with a scientific account of an empirical case. As such, Merleau-Ponty's engagement with the Schneider case has yielded a result relevant to both science and transcendental phenomenology and is thus a clear case of the IV in action.

9.7 Conclusion

My aim in this paper has been to propose a response to the Transcendentalist challenge to naturalized phenomenology by sketching the contours of what I called the *integrationist view*. Such a view, I have argued, is required if we want to not only *allow* for a relationship of mutual enlightenment between phenomenology and science (as MT does) but also *make sense* of it. The key to this view is the conception of consciousness as a structure of behavior, ontologically prior to the distinctions between objectivity and subjectivity and third- and first-person perspectives. As we have seen, this 'ontology of structure' is in Merleau-Ponty's philosophy motivated not only by the transcendentally naive perspective of observers of behavior but also equally through an internal critique of the transcendental perspective itself. In this way, we arrive at a view of the transcendental as not essentially separate from the natural, but rather as organizational norms of contingent, living nature that are best illuminated through a dialectical exchange between phenomenological and scientific approaches.

It might be objected that the end result has abandoned transcendental philosophy altogether. Given a certain conception of 'transcendental,' that is probably true. However, given the internal critique of transcendentalism involved in IV together with the historical fluidity of transcendental philosophy, I believe the label can be kept if desired.

In the last section, I made an attempt to show a concrete example of phenomenology-science integration, arguing that Merleau-Ponty's engagement with the Schneider case has the potential to both inform the scientific understanding of pathology and to be a moment in radical reflection's uncovering of its own conditions. Thus, the integrationist view finally went from

abstract articulation toward a concrete *sense*, for, as Merleau-Ponty says on the last page of the *Phenomenology*, "philosophy actualizes itself by destroying itself as an isolated philosophy" (2012: 483).

Bibliography

Ameriks, K. (2003). Kant's Transcendental Deduction as a Regressive Argument. In K. Ameriks, *Interpreting Kant's Critiques* (pp. 51-66). Oxford: Oxford University Press.

Bhaskar, R. (1978). *A Realist Theory of Science.* Sussex: The Harvester Press.

Canguillhem, G. (1978). *On the Normal and the Pathological.* (C. R. Fawcett, Trans.) London: D. Reidel Publishing Company.

Carr, D. (1999). *The Paradox of Subjectivity: The Self in the Transcendental Tradition.* Oxford: Oxford University Press.

De Preester, H. (2002). Naturalizing Husserlian Phenomenology: An Introduction. *Psychoanalytische Perspectieven, 20*(4): 633-647.

Farah, M. (2004). *Visual Agnosia.* Cambridge: MIT Press.

Gallagher, S. (2003). Phenomenology and experimental design: toward a phenomenologically enlightened experimental science. *Journal of Consciousness Studies, 10*(9-10): 85-99.

Gallagher, S. (2017). *Enactivist Interventions: Rethinking the Mind.* Oxford: Oxford University Press.

Gardner, S. (2015). Merleau-Ponty's Transcendental Theory of Perception. In S. Gardner, & M. Gist, *The Transcendental Turn.* Oxford: Oxford University Press.

Goldstein, K., & Gelb, A. (1918). Psychologische Analysen hirnpathologischer Fälle auf Grund von Untersuchungen Hirnverletzer. *Zeitschrift für die Gesamte Neurologie und Psychiatrie, 41*: 1-142.

Habermas, J. (1991). Philosophy as Stand-In and Interpreter. In J. Habermas, *Moral Consciousness and Communicative Action: Studies in Contemporary German Social Thought* (C. Lenhardt, & S. W. Nicholsen, Trans.: 1-20). Cambridge: MIT Press.

Henrich, D. (1969). The Proof-Structure of Kant's Transcendental Deduction. *The Review of Metaphysics, 22*.

Husserl, E. (1970). *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy.* (D. Carr, Trans.) Evanston: Northwestern University Press.

Inkpin, A. (2017). Was Merleau-Ponty a 'Transcendental' Phenomenologist? *Continental Philosophy Review*: 27-47.

Jansen, J. (2015). Transcendental Philosophy and the Problem of Necessity in a Contingent World. *Metodo. International Studies in Phenomenology and Philosophy*: 47-80.

Jensen, R. T. (2009). Motor intentionality and the case of Schneider. *Phenomenology and the Cognitive Sciences, 8*(3): 371-388.

Kant, I. (2007). *Critique of Pure Reason.* (M. Weigelt, & M. Müller, Trans.) London: Penguin Books Ltd.

Kee, H. (2020). Phenomenological reduction in Merleau-Ponty's The Structure of Behavior: An alternative approach to the naturalization of phenomenology. *European Journal of Philosophy, 28*: 15-32.

McDowell, J. (1994). *Mind and World.* Cambridge: Harvard University Press.

Merleau-Ponty, M. (1963). *The Structure of Behavior.* Pittsburgh: Duquesne University Press.

Merleau-Ponty, M. (1964). Phenomenology and the Sciences of Man. In M. Merleau-Ponty, & J. M. Edie (Ed.), *The Primacy of Perception: And Other Essays on Phenomenological Psychology, the Philosophy of Art, History and Politics* (J. Wild, Trans.: 43-95). Evanston: Northwestern University Press.

Merleau-Ponty, M. (1968). *The Visible and the Invisible.* (C. Lefort, Ed., & A. Lingis, Trans.) Evanston: Northwestern University Press.

Merleau-Ponty, M. (2012). *Phenomenology of Perception.* New York: Routledge.

Moran, D. (n.d.). 'Let's Look at It Objectively': Why Phenomenology Cannot be Naturalized. *Royal Institute of Philosophy Supplement, 72*: 89-115.

Morris, D. (2018). *Merleau-Ponty's Developmental Ontology.* Evanston: Northwestern University Press.

Reynolds, J. (2017). *Phenomenology, Naturalism and Science: A Hybrid and Heretical Proposal.* New York: Routledge.

Roux, J.-M. (2013). Naturalism and Transcendentalism: The Ubiquity of Idealism. *Metodo. International Studies in Phenomenology and Philosophy, 1*(2).

Roy, J.-M., Petitot, J., Pachoud, B., & Varela, F. J. (1999). Beyond the Gap: An Introduction to Naturalizing Phenomenology. In J. Petitot, F. J. Varela, B. Pachoud, & J. M. Roy (Eds.), *Naturalizing Phenomenology: Issues in Contemporary Phenomenology and Cognitive Science* (pp. 1-80). Stanford: Stanford University Press.

Stern, R. (2000). *Transcendental arguments and scepticism: answering the question of justification.* Oxford: Oxford University Press.

Strawson: F. (1966). *The Bounds of Sense: An Essay on Kant's Critique of Pure Reason.* London: Routledge.

Taylor, C. (1997). Overcoming Epistemology. In C. Taylor, *Philosophical Arguments.* Cambridge: Harvard University Press.

Thompson, E. (2007). *Mind in Life: Biology, Phenomenology, and the Sciences of Mind.* Cambridge: Harvard University Press.

Toadvine, T. (2009). *Merleau-Ponty's Philosophy of Nature.* Evanston: Northwestern University Press.

Vanzago, L. (2012). Naturalizing Phenomenology and the Nature of Phenomena. On Varela, Petitot, and Merleau-Ponty. *Chiasmi International, 14*: 131-142.

Weber, A., & Varela, F. J. (2002). Life after Kant: Natural purposes and the autopoietic foundations of biological individuality. *Phenomenology and the Cognitive Sciences*: 97-125.

Zahavi, D. (1996). Husserl's Intersubjective Transformation of Transcendental Philosophy. *Journal of the British Society for Phenomenology, 27*(7): 228-245.

Zahavi, D. (2004). Phenomenology and the project of naturalization. *Phenomenology and the Cognitive Sciences*(3): 331-347.

Zahavi, D. (2008). Phenomenology. In D. Moran (Ed.), *The Routledge Companion to Twentieth Century Philosophy* (pp. 661-692). London: Routledge.

Zahavi, D. (2010). Naturalized Phenomenology. In S. Gallagher, & D. Schmicking (Eds.), *Handbook of Phenomenology and Cognitive Science* (pp. 3-19). London: Springer.

Zahavi, D. (2011). Mutual Enlightenment and Transcendental Thought. *Journal of Consciousness Studies*(5-6): 169-175.

Zahavi, D. (2013). Naturalized Phenomenology: A Desideratum or a Category Mistake? *Royal Institute of Philosophy Supplement*(27): 23-42.

Zahavi, D. (2017). *Husserl's Legacy.* Oxford: Oxford University Press.

10

The lived, living, and behavioral sense of perception

An enactive-phenomenological response to a sensorimotor critique (A2)

With Jan Degenaar and Kevin O'Regan's (D&O) critique of (what they call) 'autopoietic enactivism' as the point of departure, this article seeks to revisit, refine, and develop phenomenology's significance for the enactive view. Arguing that D&O's 'sensorimotor theory' fails to do justice to perceptual meaning, the article unfolds by 1) connecting this meaning to the notion of enaction as a meaningful co-definition of perceiver and perceived, 2) recounting phenomenological reasons for conceiving of the perceiving subject as a living body, and 3) showing how the phenomenological perspective does a better job at fulfilling D&O's requirement for grounding notions of mentality in 'outer' criteria than they do. The picture that thus emerges is one of perceptual meaning as an integration of lived, living, and behavioral aspects – a structure of behavior that cannot be captured by appeal to sensorimotor capacities alone but that is adequately illuminated by the enactive notion of adaptive autonomy.

10.1 Introduction

Phenomenological philosophy has been a central component of the enactive approach to cognitive science from its first formulation in *The Embodied Mind* (Varela *et al.*, 1991) through many of the later contributions to the approach.[141] Despite this, there is a tendency in some parts of the literature to either neglect or misrepresent the significance of phenomenology for the enactive view, with the consequence that debates take off from inadequate premises. One example is Jan Degenaar and Kevin O'Regan's (2017; from now: D&O) arguments for why one should prefer the 'sensorimotor' over the 'autopoietic' enactivist view of perception. For reasons that will become clearer as we proceed, I will in what follows refrain from using these labels for the two views, opting instead to reserve the name 'enactive approach' or 'enactivism' for the latter and to call the position espoused by D&O 'sensorimotor theory' (ST).[142] The main

[141] Notable works include *Mind in Life* (Thompson, 2007), *Enaction* (Stewart *et al.* eds., 2010), *Enactivist Interventions* (Gallagher, 2017), *Sensorimotor Life* (Di Paolo *et al*., 2017), and *Linguistic Bodies* (Di Paolo *et al.*, 2018).

[142] The terms 'autopoietic' and 'sensorimotor' enactivism was coined by Hutto and Myin (2012), who distinguished them from their own 'radical' brand of enactivism. The convention of distinguishing between these three varieties of enactivism was further established in Ward *et al*.'s (2017) introduction to the *Topoi* special issue where D&O's article was published. However, virtually no 'autopoietic' enactivists accept the label and, representing the view with the strongest connection to Varela *et al*.'s original enactive proposal, they have also suggested that it is misleading the use the 'enactive' label for the sensorimotor and radical variants (Barandiaran, 2017; Colombetti, 2018; Thompson, 2018). 'Sensorimotor enactivism' is typically thought to be advocated in works such as Hurley (1998), O'Regan and Noë (2001), Noë (2004), and O'Regan (2011). When I speak of ST here,

point of conflict between these views, as set up by D&O, is the following: Whereas ST sees perception as constituted solely by exercises of sensorimotor capacities, enactivists hold that perception is constituted by exercises of sensorimotor capacities *and* organizational processes associated with biological identity generation. In this article, I use D&O's arguments for the redundant nature of this additional requirement as an occasion to revisit, refine, and further develop key features of enactive phenomenology in ways that have until now been lacking from the enactivist literature.

At the center of the phenomenological response to D&O that I develop here is a claim that enactivists have leveled against ST-like views of perception on many occasions and in various forms over the years. The claim is succinctly expressed by Ezequiel A. Di Paolo and colleagues, who state that these views fail to do justice to the fact that "perception is *inherently meaningful for an agent*" (2017: 179; my emphasis).[143] In what follows I approach this idea of perceptual meaning in three ways. In section 10.2 I set up the main differences between ST and enactivism, focusing on the latter's idea of enaction as a process of meaningful co-definition of agent and environment. In section 10.3 I revisit some enactive arguments against D&O's sensorimotor predecessors, showing how they form a phenomenological case for ascribing a constitutive role for the *living* body in lived perceptual experience. Section 10.4 investigates how this phenomenological approach can handle the demand, stated by D&O, that our account of perception should be based on how perceptual capacities are displayed in behavior. With these steps I aim not only to defend the enactive view against D&O's critique, but also to contribute to enactivist discourse by clarifying the significance and status of phenomenological analyses, and, ultimately, to uncover perceptual meaning as an integration of lived, living, and behavioral dimensions.

10.2 Setting the stage: enactive and sensorimotor perception

The purpose of this section is to outline some main features of the relation between ST and the enactive approach. I begin by noting their agreement when it comes to the sensorimotor nature of perception, before sketching some key differences in light of the notions of enaction and

however, I mainly refer to the view espoused by D&O and the parts of these other works that are compatible with this view. This means that Noë, who on more than one occasion (2009; 2012) has advocated a role for biological factors for perception and consciousness that is at odds with D&O's view, should not be seen as a full representative of ST.

[143] A similar critique has recently been raised by Noë against Hutto and Myin's 'radical enactivism' (2021). He argues that the radical enactivists fail to do justice to perceptual *presence*, which I take to more or less correspond to what I call perceptual *meaning*.

mind-life continuity, and, lastly, presenting the critique raised by D&O. I conclude the section by stating the need to have a closer look at the phenomenological motivation for the enactive notion of perception.

The consensus

Both enactivists and sensorimotor theorists view perception as embodied and active, constituted by a body's dynamic handling of sensorimotor patterns; i.e., patterns in the co-variation of movement and sensory flow. One key idea here is to reject what Susan Hurley called "the classical sandwich" model of the mind (1998: 401), according to which action and perception make up two separate components of the mind with cognition stuffed in between as a mediator. The embodied and active view, rather, sees action and perception as essentially integrated: movement and sensory flow are inseparable moments of a continuous cycle of body-environment interactions, which does not require the mediation of anything like representational thought or cognition (Noë, 2004). Here, perception is itself understood as a form of activity, as a perceiver's explorative exploitation of sensorimotor patterns. Consider, for instance, this analysis of what constitutes the "feel" of Porsche driving from the paper that launched the first explicitly sensorimotor approach to perception:

> There are characteristic ways in which the vehicle accelerates in response to pressure on the gas pedal. There are definite features of the way the car handles turns, how smoothly one can change gears, and so on. What it is like to drive a Porsche is constituted by all these sensorimotor contingencies and by one's skillful mastery of them […]. (O'Regan & Noë, 2001: 961)

Or, to take another example, my perception of a sponge's softness does not reside *in me*, but in its distinctive ways of yielding to and resisting the push of my fingers (O'Regan, 2011: 108).[144] Perception, in other words, is achieved and constituted not *within* the perceiver('s head) but at the dynamic intersection between embodied perceivers and their surroundings. Phrased in these general terms, the sensorimotor account of perception represents something like a core consensus between ST and the enactive approach. Upon further scrutiny, however, some significant differences between the two views emerge.

Two notions of enaction

Some of D&O's sensorimotor predecessors have been accused by enactivists of tending – despite pronounced anti-representationalist ambitions – to be too caught up in a language and

[144] O'Regan credits Erik Myin (2003) for coming up with the example. For a detailed treatment of the sensorimotor contingencies involved in squeezing a sponge, see Di Paolo *et al.* (2017: 58 ff.).

a way of thinking with a strong "representational pull" (Di Paolo et al., 2017: 30).[145] Briefly, this has to do with these sensorimotor views understanding the idea of "skillful mastery" from the above quote in terms of a form of "knowledge" (O'Regan and Noë, 2001: 946) on the part of the subject-pole of the perceptual relation. The implication, if this interpretation is correct, is that perception is not essentially interactional and non-representational after all but is rather accomplished squarely on the side of the perceiver, through the application of stored or represented knowledge of sensorimotor patterns. In contrast, enactivism advocates a *world-involving* notion of mastery, according to which mastery is "an emergent property of a whole embodied agent in interaction with the environment" (Di Paolo *et al.*, 2017: 36). Here, perceiver and surroundings are taken to be primordially integrated rather than distinct. Thus, one does not require a one-sided contribution of the former to make sense of it accessing the latter; rather, mastery is seen as a feature of the relation itself.[146]

While it seems that D&O manage to steer clear of the representational pull, the idea of world-involvement nonetheless marks a difference between their position and the enactive view. This difference can be illuminated by noting that there are currently two different notions of *enaction* at play in the literature. First, there is the *broad* sense, which seems to be the most predominant. Here, to say that perception (or cognition more generally) is enactive simply means that it is *active* or somehow action-based.[147] This is the sense assumed in cases where the label 'sensorimotor *enactivism*' is used. Next, there is the *narrow* notion of 'enaction'. This is the notion that was introduced with the original enactive approach in *The Embodied Mind*, where it was meant to emphasize the idea that "cognition is not the representation of a pregiven world by a pregiven mind but is rather *the enactment of a world and a mind*" (Varela et al., 1991: 9; my emphasis). Thus, while sharing the broad notion's emphasis on activity, 'enaction' here signifies the more radical idea of a process of "co-definition" (Varela, 2011: 614) or "mutual shaping" (Di Paolo, 2018: 88) of agent and environment. The main difference between the two notions of enaction is the following: On the narrow notion, the world-involving nature of perception is understood in a way that is also suited to explain the nature and emergence of the *perceiver* and how the world manifests a meaningful domain *for* the perceiver. The broad

[145] Hutto and Myin (2012) also accuse 'sensorimotor enactivism' of remaining too representationalist.
[146] Not all instances of what is typically thought of as sensorimotor approaches to perception are equally vulnerable to the accusation of representationalism. Noë (2009), for instance, explicitly endorses a 'world-involving' notion of perception, though he elsewhere – in O'Regan and Noë (2001) and occasionally in Noë (2004) – seems more susceptible to the 'representational pull'.
[147] When the editors of *The Oxford Handbook of 4E Cognition* state that a cognitive process is enacted if it is "partially constituted by" or "partially dependent upon the ability or disposition to act" (Newen *et al*., 2018: 6), they are defining the broad notion of enaction.

notion alone, however, contains no such resources – it simply presupposes the existence of perceiver and perceivable world and theorizes that their relation is accomplished through action. As we'll see in the discussions to follow (particularly in sections 3 and 4), this difference underlies much of the conflict between D&O and the enactive view.

Mind-life continuity and adaptive autonomy

We gain a better understanding of the narrow notion of enaction through the enactive *mind-life continuity thesis*. As we'll see shortly, this thesis is the main target of D&O's critique. In a much-cited formulation, the thesis states that "life and mind share a set of basic organizational properties, and the organizational properties distinctive of mind are an enriched version of those fundamental to life. Mind is life-like and life is mind-like" (Thompson, 2007: 128). A distinctive trait of enactivists' understanding of this thesis, which contrasts with similar theses espoused by others, is that it refers not only to a continuity of function, organization, or behavior but also involves a continuity in subjective and experiential – i.e., *phenomenological* – features of mentality (ibid.: 129). In other words, the thesis posits that there is a deep connection between phenomenological and biological structures, so that some phenomenological concepts apply – at least to some extent – to the whole range of living beings from humans to the simplest organisms, and some biological concepts likewise can be used to make sense of aspects of human phenomenology as emergent, natural phenomena.[148] As such, the mind-life continuity thesis is the centerpiece in enactivism's project of naturalizing the mind.

From the phenomenological side, which we'll return to in section 3, the core idea is that lived experience is the presentation of a world of *meaning* to an embodied subject, and that this meaning is constituted by structures of subject-world *correlation* – i.e., structures of interdependence and co-specification between subject and world (Merleau-Ponty, 2012: 454).[149] To be clear, 'meaning' does in this case not mean representational content, but rather a deeper and broader dimension of significance or value, correlated to the perceiver's pragmatic and existential projects, that is inherent in how the perceived world manifests as present for

[148] Enactivists draw inspiration from Hans Jonas' (1966) existential biology when arguing that even the simplest organisms instantiate forms of teleology and agency (Weber & Varela, 2002; Thompson, 2007; Di Paolo, 2009). This "Jonasian turn" in enactivism is not uncontroversial (Villalobos & Ward, 2016; Kee, 2018), but it is beyond the scope of this article to discuss it here. See Hverven & Netland (2021) for a response to some of the criticism, and a clarification of Jonas' philosophy in the enactivist context.

[149] Hence, in contrast to how it is often used, 'correlation' does here not mean a relationship between two independent events, but rather a relation of mutual dependence.

perceivers. From the biological side, the enactivists appeal to the notion of *adaptive autonomy* in order to give a naturalistic account of the meaningful subject-world (or agent-environment) co-specification characteristic of lived experience (Di Paolo, 2005; 2018; Thompson, 2007).

'Autonomy' in this context refers to a specific form of self-individuation displayed by some systems. The notion has roots in Humberto Maturana and Francisco Varela's (1980) proposal to define life in terms of the organizational property of *autopoiesis*. An autopoietic system, on this theory, is a system that is

> organized (defined as a unity) as a network of processes of production (transformation and destruction) of components which: (i) through their interactions and transformations continuously regenerate and realize the network of processes (relations) that produced them; and (ii) constitute it [the system] as a concrete unity in space in which they (the components) exist by specifying the topological domain of its realization as such a network. (ibid.:78-79)

Thus construed, autopoiesis is a form of organization that belongs to the physico-chemical domain, involving the generation of a "semipermeable boundary" (Thompson, 2007: 101) that distinguishes the system as a material individual relative to its surroundings. The paradigmatic example is the living cell. Through metabolic exchanges of matter and energy with its surroundings, the cell produces itself as a network of mutually enabling processes distinguished from its surroundings by the semipermeable cell membrane. We here see an affinity to the idea of subject-world co-specification: The autopoietic system, we can say, carves out or specifies a section of the world relevant for its existence (e.g., what kind of material that is let through the membrane), while this section in turn contributes to specifying the system as an individual by being a necessary component in its process of self-generation.

While being historically rooted in Maturana and Varela's autopoietic theory, the contemporary enactive view differs from it in various – and significant – ways (Di Paolo and Thompson, 2014; Di Paolo, 2018). First of all, the notion of autonomy that is at the center of the enactive approach stems from Varela's (1979) generalization of the concept of autopoiesis to self-individuating forms of organization in domains other than the sort of material self-production displayed by single cells. Autopoiesis, on this view, is only one particular – basic, physico-chemical – *kind* of autonomy (Thompson, 2007: 44). This is one reason why it is misleading to use the name 'autopoietic enactivism' for this brand of enactive theory (Thompson, 2018). An autonomous system, as enactivists define it, does not necessarily involve the production of a semipermeable material boundary, but it must be *operationally closed* and *precarious* (Di Paolo and Thompson, 2014). A system is operationally closed if it

consists of a network of mutually enabling processes (which is not to say that it depends *only* on its own processes). As such, the notion of operational closure captures, in more general terms, the core pattern of autopoietic organization as defined by Maturana and Varela. That autonomous systems are precarious means that the processes they consist of are such that they cannot persist without the enabling relations of the operationally closed network. Hence, considered in isolation, each process tends toward a breakdown that is avoided only as long as the network is maintained. The enactive notion of autonomy, then, refers to operationally closed systems that are constantly working to maintain themselves in the face of their constituent's – and hence their own – tendencies to decay. This work consists in negotiating a "primordial tension" between two opposite tendencies that are equally indispensable for the project of self-individuation: the tendency toward self-enclosure, distinguishing the system as an individual relative to its environment, and the tendency toward openness, allowing exchanges with the environment required for sustaining the processes of self-production (Di Paolo et al., 2017: 134). Both of these tendencies must be kept in check in order for the autonomous system to persist as such: both total closure and total openness, the respective goals of each of the tendencies considered in isolation, are fatal for self-individuation.

Thus conceived, autonomous systems are characterized by a form of purposiveness – aiming at self-preservation through counteracting the destructive tendencies of their precarious nature – and as such also by a normativity that distinguishes between conditions that are good and bad relative to this purpose. Enactivists use the notion of *adaptivity* to make sense of how norms pertaining to autonomous systems' existence can become manifest *for* the systems themselves, establishing them as agents entertaining a meaningful perspective on their domain of interactions. Briefly put, adaptivity is the capacity of some autonomous systems to regulate their activities and relations in response to tendencies registered as approaching or receding from the boundary of their viability, so as to preserve their continued existence (Di Paolo, 2005; 2018).[150] Adaptivity, in other words, is the capacity by which autonomous systems are able to continually resolve the primordial tension of self-individuation (Di Paolo et al., 2017: 134). The notion of autonomy by itself, without adaptivity, only entails an "all-or-nothing" form of

[150] This is a simplified rendering. The full, operational definition states that adaptivity is "a system's capacity, in some circumstances, to regulate its states and its relation to the environment with the result that, if the states are sufficiently close to the boundary of viability: 1. Tendencies are distinguished and acted upon depending on whether the states will approach or recede from the boundary and, as a consequence, 2. Tendencies of the first kind are moved closer to or transformed into tendencies of the second, and so future states are prevented from reaching the boundary with an outward velocity" (Di Paolo, 2005: 438).

normativity (Di Paolo, 2005: 436) where things are equally 'good' for the system as long as it persists, regardless of whether it is thriving in a safe and healthy environment or is sliding toward a cliff from which it will fall to its inevitable death, and 'bad' first when the system is actually destroyed. *Adaptive* autonomous systems, on the other hand, are responsive to possible futures evaluated in light of *graded* norms distinguishing not only 'good' (alive) and 'bad' (dead), but conditions that are 'better', 'neutral', and 'worse' for the systems' viability. For instance, given the appropriate sensorimotor capacities, such systems will recognize the slide toward a cliff as a tendency in the wrong direction and actively work against it. As such, adaptive autonomous systems are agents operating in a domain that is present *for them* as significant (in simple terms, as approachable or repulsive) relative to norms pertaining to their own existence as autonomous agents. In enactivist terms, adaptive autonomous systems' behavior relative to the graded norms of their viability is a process of *sense-making* – the simultaneous, interdependent realization of an agent and its meaningful environment.

With the concept of adaptive autonomy, the co-definitional logic implied by the original definition of autopoiesis has thus evolved to a form that seems better suited to capture the phenomenological idea of co-definition as involving the constitution of meaning and subjectivity. Here it is important to remember that autonomy is a more general term than autopoiesis, applicable to instances of self-individuation in a wider range of domains. On the enactive view, the meaning and subjectivity characteristic of human perception emerges through processes of self-individuation that involve not only the organic, but also *sensorimotor* and *intersubjective* dimensions (Di Paolo et al., 2017: 5). First, human perceivers are *sensorimotor agents,* characterized by a form of adaptive autonomy that organizes sensorimotor schemes in an operationally closed network. As such, our sense-making does not unfold solely in relation to the norms determined by the project of upholding our metabolic existence, but also to norms relevant for our sensorimotor identity. In Di Paolo et al.'s words, "[a] sensorimotor subject's activities become meaningful not only in virtue of their contribution to biological survival, but also in virtue of their contribution to the stability and coherence of a sensorimotor repertoire" (2017: 39). So, for instance, the activity of lighting up a cigarette – which is clearly not aimed at biological survival – involves a range of sensorimotor schemes (putting the cigarette between one's lips, finding and igniting the lighter, etc.) that must be done in the right order and in the right way for the activity to be successful, achieving one's sensorimotor identity as cigarette smoker (ibid.: 147). Second, we are intersubjective and *linguistic* agents (Di Paolo et al., 2018), having our identities and our world shaped by activities of participatory sense-making (De Jaegher and Di Paolo, 2007) with other human subjects,

adding dimensions of meaning to our existence that, for instance, makes the activity of cigarette smoking expressive of a culturally situated *human* identity (symbolizing e.g. weakness of the will or a rebellious nature).

Hence, although adaptive autonomy is a biological concept in the sense that it is paradigmatically exemplified by the organizational pattern by which living organisms maintain their existence as such, enactivists employ it to describe forms of organization over and above the level of organic self-production, and it is only by doing so that they purport to be able to account for the features of human perception. This point is crucial for our purposes, since it, as we'll see shortly, means that parts of D&O's critique are based on a misunderstanding.

D&O's critique

It is the biological side of enactive theory that is the main target of D&O's critique. As they see it, ("autopoietic") enactivists are committed to the claim that "there is a *necessary and constitutive* relation between conscious experience and autopoietic processes or associated background capacities" (2017: 397; orig. emphasis). ST, on the other hand, holds that "perceptual consciousness can be understood without further appeal to factors outside the domain of perceptual interactions and their behavioral expressions" (ibid.). D&O's objection, in other words, is that "autopoietic processes or associated background capacities" are external to the domain of perceptual interactions and hence not part of what constitutes perception. At best, they claim, such processes or capacities might be *instrumentally* necessary for perception, i.e., they might be necessary for *enabling* a system to engage in perceptual interactions, though they play no part *in* the interactions themselves (ibid.: 399). For instance, they grant that *some* form of autonomy probably is necessary for a system to qualify as a perceiver, though they suggest that a "deflationary" form of autonomy, according to which a system is autonomous if its behavior is "underdetermined by its present environment," might suffice (ibid.). Regardless of the role autonomy might play as an enabling condition for perception, however, "this does not imply that conscious perception is *constituted* by anything outside the domain of recognizably perceptual capacities" (ibid.; orig. emphasis). And to be clear, D&O's notion of perceptual capacities has a purely sensorimotor sense: they are sensing capacities exercised by perceivers, where sensing capacities are understood as capacities for "master[ing] the current sensorimotor dependencies linking possible actions and resulting changes in sensory stimulation" (ibid.: 394). Since such capacities in their view "can be displayed even by simple artifacts, such as missile guidance systems" (ibid.), they are clearly not unique to the biological domain.

How can the enactivists respond to this? Let's begin by noting an imprecision in D&O's articulation of the enactive commitment above; namely, that *autopoiesis* is assumed to be constitutive of conscious experience. The same misrepresentation is at play also at a later point, when they argue that "[w]hen we learn to use the concept of conscious perceptual experience, we do not appear to make use of knowledge of metabolism" (ibid.: 405; I look closer at this objection in section 4). The assumption here is that the mind-life continuity thesis commits the enactivists to the idea that the bio-chemical, cellular processes of self-generation are constitutive of all mental phenomena. However, what the thesis states is that the same organizational properties (adaptive autonomy) apply to both minds and living organisms. This entails that perception constitutively depends on *some* instantiation of adaptive autonomy, but not that it constitutively depends on adaptive autonomy as instantiated at the autopoietic or metabolic level. Indeed, we have already seen that human perception, on the enactive view, emerges through adaptive autonomy instantiated in a space encompassing not only the organic, but also sensorimotor and intersubjective dimensions. These dimensions are interweaved in a variety of complex ways, making it impossible to give a simple, general answer to the question of how they are related (Di Paolo et al., 2017: 173). Our sensorimotor agency, for instance, is enabled and constrained by our organic identity, but it is also underdetermined by and might even be in tension with it (as the example of cigarette smoking shows), and features of our organic identity are in turn shaped by possibilities opened by our sensorimotor agency.[151] Enactivists do however not seem to think that organic forms of self-individuation are *constitutively* necessary for perception in the way assumed by D&O. In fact, the question of whether autopoiesis is even *instrumentally* necessary for adaptive autonomous agency, and hence for mental phenomena, is left open by central enactivists (Di Paolo, 2009; Di Paolo et al., 2017; Thompson, 2018).

While this makes less of a straw man of the enactive position, it does not clear away D&O's main concern. Even if perception on the enactive view is not necessarily constitutively dependent on *autopoiesis*, it is still constitutively dependent on adaptive autonomy, and adaptive autonomy is 'outside' the domain of perceptual capacities as defined by D&O. The enactivists can reply to this by pointing out that, on their view, this separation of the perceiving agent's organization from its (exercise of) perceptual capacities is not tenable. To say that perception is constitutively characterized by adaptive autonomy means that perception *is* a

[151] As Di Paolo *et al*. note, "practically all animal life" is "organizationally dependent" on the sensorimotor level in the sense that it relies on sources of nutrition that can only be accessed by mobile, sensorimotor agents (ibid.: 174).

process by which the interdependent system of perceiver-perceived is enacted; perceivers emerge as such *through* the ways they interact with their environment, and hence there is no perceptual agent prior to or apart from the exercise of perceptual capacities. A consequence of this is that although perceivers and missile guidance systems display capacities that are similar in their sensorimotor character, the capacities are ultimately different in nature. *Perceptual* capacities are capacities that serve to uphold a dynamic and precarious perceiver-identity through a continuous flow of sensorimotor patterns that are meaningful *for* the perceiver, whereas the missile guidance system's capacities are capacities for exploiting specific sensorimotor patterns in order to track moving objects, implemented in a static-identity, non-autonomous (i.e., heteronomous) system pre-defined by human designers.

Here we arrive at our main topic. For, as it stands, this retort against D&O *presupposes* the enactive notion of perception as meaningful co-definition, when what is really needed is a *defense* of that notion. In the next section, we'll look at some of the phenomenological reasons for accepting the enactive view of perception.

10.3 The lived and living sense of perception

Without explicitly recognizing them as such, D&O do consider three phenomenological reasons for preferring the enactive over their sensorimotor view of perception. These are the objections, leveled against sensorimotor views by enactivists on earlier occasions, that they lack resources for doing justice to the roles of 1) pre-reflective bodily self-awareness, 2) affectivity, and 3) unified subjectivity in perception. By revisiting these objections below, my intention is to refine them in a way that makes them better suited to respond to D&O's critique and that clarifies a central aspect of phenomenology's significance for enactivism. I do this by emphasizing the essential interconnection of 1-3 as moments in the phenomenological idea of subject-world interdependence or correlation, with the aim of showing how perceptual meaning as phenomenologically uncovered is grounded in the perceiver's nature as a *living* body.[152]

Pre-reflective bodily self-awareness

In *Mind in Life*, Evan Thompson argues that the sensorimotor approach needs to be supplemented with the enactive theory of adaptive autonomy and "a phenomenological account of bodily self-consciousness" (2007: 258). Regarding the latter, Thompson takes issue with

[152] See Stapleton and Froese (2016) for more on the relation between phenomenology and biology in enactivism.

Myin and O'Regan's (2002) sensorimotor account of subjectivity, claiming that it fails to account for what is arguably the essence of subjectivity, namely, "the first-personal quality of experience as such" (2007: 262). To do this, it is not sufficient to account only for what it is for an object to be *accessible* to a subject, as Thompson claims Myin and O'Regan do. One also needs to recognize the role of pre-reflective bodily self-awareness in constituting the object as phenomenally manifest *for me*.

Take, for instance, the experience of a cup. The cup in front of me is accessible to me as an object that affords certain activities. It affords drinking as its culturally determined use-value, but it also presents the possibility of a range of other manipulative and explorative movements. Not least, the cup requires certain patterns of perceptual activity, like visually or tactilely tracing its contours, to remain perceptually present at all. The notion of pre-reflective bodily self-awareness denotes the fact that this access to the cup has a *sense* that touches or refers back to me as a bodily subject, without it being the case that I consciously attend to or reflect on my bodily self. When I touch the cup, my experience involves a feeling of pressure from the cup touching my fingers, and when I trace its contours with my hand, the tactile sensation is integrated with my sense of movement, forming a pattern of activity and feeling that constitutes the cup as manifest *for me*.

This is a key aspect of the idea of perceiver-perceived co-definition. With the notion of pre-reflective bodily self-awareness, we see how perceptual objects are defined by the ways they 'touch' perceivers in response to the perceivers' activities, and we get the other pole of the correlational structure by recognizing that the perceivers in turn, *qua* embodied subjects, are defined as such through their *being touched* in the way that they are: the tactile and kinesthetic patterns that trace the contours of the cup as perceptual object for me simultaneously outline my 'contours' as cup-perceiver, specifying my phenomenological perceiver-identity.[153]

D&O do not engage substantially with the idea of pre-reflective bodily self-awareness. In fact, they reject the idea without any real consideration, stating simply that "there seems no reason to suppose that in general conscious experience of the body is required for conscious experience of the world" (2017: 400). Two things can be said in response to this. First, their rendering of the idea in terms of "conscious experience of the body" does not make it clear that the experience in question is the *pre-reflective* sense of being a bodily subject, a *lived body*,

[153] See Gapenne (2010) for a review of several studies supporting the idea of a kinesthetic co-constitution of perceiving subject and perceptual objects. Di Paolo *et al.* (2017) offer a detailed dynamical systems framework for making sense of this kind of idea.

and not an experience *of* the body as object. Secondly, the fact that they find *no reason* for the idea that the lived body is constitutive of perceptual experience reveals a failure to engage with enactivism's phenomenological dimension, and hence a neglect of a key feature of the enactive view. In order to reject the idea of the lived body, D&O would have to either propose an alternative phenomenological account or deny that phenomenological accounts should be granted this sort of authority in cognitive science. D&O does not take an explicit stance on this question, though in section 4 we'll see that they seem to implicitly embrace the latter alternative.

Affectivity

Enactivists have also accused sensorimotor views of lacking the conceptual resources to make sense of the affective dimension of perception. Shaun Gallagher, for instance, argues that "[s]chemata of sensorimotor contingencies give an agent the *how* of perception, a tacit knowledge of potential sensorimotor engagements, without giving its *why*, which depends on latent valences that push or pull for attention in one direction or another" (2017: 151, orig. emphasis). The perceived world is never presented as a completely neutral set of motor possibilities. It appears as a field of *senses* that, basically construed, fall on an attractive-repulsive continuum, but which typically also have a thicker meaning connected to one's current projects and the intersubjective lifeworld one inhabits. Consider, for instance, the experience of playing football: the ball rolling towards me certainly presents me with certain motor possibilities, but these possibilities are far from neutral – they have a value determined by the context of the game and my present situation in it, manifested perceptually as, e.g., opportunities for scoring a goal (Merleau-Ponty, 1963: 168). Likewise, the cup in front of me sometimes appears as an opportunity for a refreshing sip of coffee, and other times as an annoyance that hinders me from placing my papers where I want them. In general, affectivity denotes the fact that perceptual sense must be understood as this kind of orientation of the perceptual field, presenting solicitations for behavior defined against the background of the perceiver's multifaceted existential context.

Affectivity, as Giovanna Colombetti puts it, is "a broad capacity to be affected or 'touched' by something" (2018: 574). I kick the ball because that *strikes me* as the thing to do in that situation. Importantly, affectivity thus conceived is not a faculty external to perception or a type of experience that only occasionally occurs. Rather, perception – *qua* sense-making – is necessarily and intrinsically affective (Colombetti, 2013: 18ff.). To perceive is to be

presented with a meaningful world, which entails being affected by that world in an existential way.

We can see this clearer by noting the relation between affectivity and pre-reflective bodily self-awareness: These are not, as my treating them under separate subheadings might suggest, two distinct phenomena. On the contrary, pre-reflective bodily self-awareness *is* a primordial experiential manifestation of being affected – it is the experience of being touched through one's bodily dealings with the world. And 'being touched' in this case is not simply to feel discrete sensations of, say, tactile pressure, but already to be presented with a meaningful situation loaded with motivational forces for my activities. The patterns of perceptual activity that, through the corresponding modulations of my bodily self-awareness, keep the cup perceptually present, trace a *sense* that appears against the background of my present situation (e.g., as craving coffee) and, ultimately, my overall *form of life* (as, among other things, a type of being capable of drinking that is also part of a cup-using culture). In this way, the 'touch' in question is an *existential* touch, and pre-reflective bodily self-awareness – affectivity – can be construed more broadly as *a sense of existence*.

This gives more substance to the idea of agent-world co-definition. With the notion of affectivity we see, first, how the perceived world is specified relative to the perceiver's projects and mode of existence; my perceived world is organized by forces of valence that are of existential significance to me. Secondly, perceivers are in turn defined and situated through the ways we are affected by the world; my mode of existence is specified by the way the world shows up as meaningful to me. My identity as perceiver is not first given by me as an isolated subject and then projected as a layer of significance on my surroundings; it is realized, maintained, and modulated – *enacted* – through my affective interactions with the world.

The charge against ST, then, is that it is unable to do justice to perception's affective dimension. D&O respond to this in two steps. First, they note that sensorimotor contingencies can be defined on levels of abstraction that count for instance *knowing how to make a friend smile* as a sensorimotor skill (2017: 402). Next, admitting that this still does not provide us with the affective 'why' of perception, they suggest that an appeal to "action tendencies" might solve the problem:

> [W]hen I am inclined to comfort a friend when she's sad, or when I tend to try to make her laugh when she's cheerful, these behavioral tendencies may be part of the affective aspects of my experience. To the extent that this is the case, affective aspects of the experience lie within the domain of perceptual [i.e. sensorimotor] attunement and its expressions. (ibid.)

What is it about my perception of my friend's mood that makes me want to comfort her? On this view, it is my *inclination* to respond in that way to that mood in that person. But this does not solve the problem. Saying that I *tend* to comfort my friend when she is sad does not explain how my perception of her *motivates* that tendency, and it is this motivational force of perception that we are trying to understand. Once again, reflections on the phenomenology of perception seem absent from D&O's reasoning. When I perceive my sad friend, her behavior is expressive of a *sense* that affects me as a person that cares for my friend. I could not be *inclined* to comfort my friend if my perception of her didn't motivate me in some way in the first place.

D&O might respond that the motivational factor appealed to here can be attributed to *emotions* (e.g., empathy), which on their view – together with "experiences of thought" and "feelings like hunger and pain" – belong outside the domain of perception (2017: 393n1). This 'purified' view of perception does however not hold up against the scientific and phenomenological evidence. For one, we know that there is significant "anatomical and functional overlap" as well as reciprocal and circular interactions between the systems subserving perception and emotion at the neural level (Lewis, 2005: 178; Duncan and Barrett, 2007). There is also strong evidence to suggest that a form of basic or core affectivity underpins consciousness and cognition as such (Barrett and Bliss-Moreau, 2009; Colombetti, 2013; Damasio, 1999), and numerous studies have shown how differences in emotional states are correlated with perceiving things differently.[154] From the phenomenological perspective, moreover, it is not clear what would be left of perception if stripped of the affective and emotional dimension. We have already seen how the affectivity of pre-reflective bodily self-awareness grounds the subjectivity of perceptual experience – what would perception be if it did not involve the presentation of a scene *for* a perceiver? Further, the figure-ground structure of perception – where some things always stand out as more salient than others against a less determinate background – is also deeply connected to affectivity and emotion. Indeed, the figure-ground structure of perception reflects the fact that perception is never completely neutral, but is organized according to interests, concerns, and the general affective embeddedness of the perceiver – it always has a *sense*. Hence, in the examples we have considered above, the affective and emotional dimension manifests *in* the way figure and ground are organized in the perceptual field – the ball stands out as kick-able in the grassy

[154] For instance, mood influences the perception of steepness (Riener et al., 2011), and depression influences the perception of contrast (Salmela et al., 2021). See also Gallagher (2017: 151ff).

field, my sad friend captures my concerned attention and makes other things recede into the background – and can as such not be conceived as external to perception.

The living and temporal unity of subjectivity

The last objection to ST that I'm going to consider in this section is that of unified subjectivity. The main idea here is that perception presupposes a *perceiver*, a subject of perceptual experience and agent of perceptual activity. By labeling exercises of sensorimotor capacities the sole constitutive condition of perception, the claim goes, ST *presupposes* a perceiver-system capable of exercising said capacities, without providing an account of what it is that characterizes perceivers as such (Thompson, 2007; Di Paolo et al., 2017). We already touched on this issue in section 2. We saw there that D&O acknowledge that some sort of autonomy might be necessary for a system to qualify as a perceiver, but still argue that it is nonetheless only exercises of sensorimotor capacities that are *constitutively* necessary for perception, whereas, on the other hand, the notion of enaction as co-specification means that perception *is* an adaptive autonomous system's generation of itself as a perceiver. I'll now indicate how the reflections from the previous subsections provide a phenomenological conception of this perceiver as a living body. But first some background. Phenomenologists tend to distinguish between the *lived* and the *living* body as two aspects of embodiment, where the former denotes the body considered as a *subject* of experience and the latter the body as an *experienceable*, physical structure (Husserl, 1970; Heinämaa, 2018; Wehrle, 2020). This "double sense" of embodiment (Varela et al., 1991: xvi) is central to the enactive idea of mutual illumination between phenomenology and objective science and their naturalization of the mind by way of the notions of embodied subjectivity and biological naturalism (Hanna and Thompson, 2003; Thompson, 2007: 237; Fuchs, 2020). My remarks below offer a way to make sense of these ideas by sketching how the lived body is integrated with the living body, and the extent to which the living body in this context is a *biological* body.

The phenomenon of pre-reflective bodily self-awareness reveals the *embodied* nature of the perceiver. Of course, ST also holds that perception is embodied in the sense of being constituted by bodily activity. Here, however, we're talking about embodiment in a deeper sense, which also involves the fundamental *passivity* that comes with being a vulnerable, material presence that is, as Merleau-Ponty says, "caught in the fabric of the world" (1964a: 163). In short, lived perception essentially involves being revealed pre-reflectively to oneself as a *living* body: I am not a pure subject but a bodily existence that is exposed to the contingencies of the world, and it is, among other things, the process of this constantly being

proven to me through being touched by the world that constitutes my unity or identity as an embodied perceiver.

Further, affectivity signals a perceiver that *cares* for her own existence through being sensitive and responsive to her bodily contingency and vulnerability. For one's living body to be pre-reflectively part of one's experience is to be aware that one's existence as a living body is at stake in one's dealings with the world, and this is what constitutes the world's meaningful presence in the first place. In this way, affectivity lays at the ground of our *temporal* unity as perceivers – the coherence of our experiences as *our* experiences through time. According to Husserl's (1991) phenomenology of time-consciousness, which has a central place in enactive theory (Thompson, 2007: ch. 11; Varela, 1999), the temporality of experience is constituted by a dynamic interweaving of three interdependent moments: primal impression (the 'now'), retention (of the immediate past), and protention (anticipation of the immediate future). In this picture, affectivity is what underlies the future-oriented drive of experience (Thompson, 2007: ch. 12; Varela and Depraz, 2005). As affectively laden, the perceptual field is constituted as a field of possible futures that *matter for* the perceiver because they are possible future presents *of* the perceiver, presents that inevitably involve being 'touched' and modified by the perceived in various ways. Further, retention must on this view be understood as the persistence in the presence of prior affections, possible futures turned actual past, informing our future-directed attitude. Without affectivity, one's surroundings will not manifest as projections of one's future selves, and one's present state will not be defined (for oneself) as a modification of a past self, and there will thus be no temporally coherent experience.

It is not difficult to see the affinities between these phenomenological analyses and the enactive notion of adaptive autonomy. An adaptive autonomous system, remember, is a precarious system that upholds itself as an individual through interactions with its surroundings, instantiating a perspective on its surroundings as significant for its future states. This fits well with the idea of the living and temporal unity of the perceiving subject. In Thompson's words, the "immanent purposiveness of life is recapitulated in the temporality and intentionality of consciousness" (2007: 362).[155] Of course, the phenomenological reflections above do not warrant us to conclude that the biochemical process of metabolism is constitutively necessary for perception. But, as we saw in section 2, this is not what the enactive mind-life continuity thesis entails anyway. The analyses do however suggest that the subject

[155] The enactivists are here following Jonas (1966: 86), who interpret the "biological time" of metabolism along the lines of the phenomenological analysis of temporality,

of perception is biological in the sense of displaying the *general* logic of life – adaptive autonomy.

10.4 The behavioral sense of perception

The upshot of the previous section is that the phenomenology of perception favors the enactive over D&O's view of perception. In this section, I aim to clarify the methodological role of phenomenology as a way to delineate the nature of mental phenomena in light of a challenge implicit in D&O's argument. As I remarked above, in order to counter enactivists' reliance on phenomenology, sensorimotor theorists must either argue that their phenomenological analyses are inaccurate or deny that phenomenology has this kind of authority over theories in cognitive science. Though D&O do not explicitly engage in any discussions about phenomenology, they make it very clear what they consider to be the appropriate way to ground our notions of mentality; namely, to look at how mental phenomena are displayed in *behavior*. This can seem to be at odds with the phenomenological approach, insofar as phenomenology often is understood to deal merely with the first-personal character of experience. Below I'll argue that this worry is misplaced by demonstrating how the phenomenology of perception must, in a sense, be understood as a reflection of perceptual behavior, and further, that it is actually ST that fails to capture perception's behavioral manifestation.

The significance of perceptual behavior

According to D&O, if we want to know what perception is, we should look at how perception is exhibited in perceptual behavior. "An 'inner process'," as Wittgenstein says, "stands in need of outward criteria" (2009, §580; quoted by D&O, 2017: 398). Following this line of thought, the relevant question for determining which factors are constitutive of perception, according to D&O, is "[w]hich interactions of a system are relevant for the sensible ascription of perceptual consciousness?" (2017: 397). Needless to say, D&O find that only interactions that can be explained purely in terms of exercises of sensorimotor capacities are relevant. As they see it, the enactive view of perception as constituted of biological organizational processes posits *more* factors as constitutive of perception than what is displayed in perceptual behavior, and is hence guilty of assuming a notion of perception that is misaligned with the contexts and practices from which 'perception' gets its meaning in the first place. This is the background for D&O's objection, quoted in section 2, that "[w]hen we learn to use the concept of conscious perceptual experience, we do not appear to make use of knowledge of metabolism" (2017: 405). Even though the invocation of metabolism, as we saw there, misrepresents the enactive

view, the general question underlying the objection is still legitimate: how can the enactive approach – in particular, the phenomenological component we saw at play in the previous section – deal with the demand for "outward criteria"?

Let's first have a look at a key premise of D&O's objection, in order to seek out some reasons for why we should want to ground our notions of mentality in behavior. Is it really the case that the nature of perception can be determined by looking at the basis from which we learn the concept of perception? A worry with this idea is that it seems to conflate the semantics and metaphysics of perception. For instance, I might learn the concept 'Venus' by being made aware of an object with a distinct position and brightness in the night sky, but this does not mean that I thus gain full access to Venus' *nature* (e.g., that it is a planet of such-and-such a mass orbiting the sun at such-and-such a speed). Venus' distinctive appearance in the night sky does not by itself provide me with the necessary and sufficient conditions for being Venus. Likewise, one could argue that even if we learn the concept 'perception' from observing perceptual behavior, and this behavior seems to be constituted solely by exercises of sensorimotor capacities, this does not by itself warrant the conclusion that perception *is* nothing but exercises of sensorimotor capacities.

In D&O's defense, however, perception is a very different kind of 'object' than Venus. In the case of Venus, it is possible to look behind its night sky appearance and discover its real properties, but can we do the same thing with perception? That is, can we make sense of there being a 'real' perception behind perceptual behavior? One way to respond positively to this question is to advocate a form of reductionism, for instance the idea that perception *really is* nothing but such-and-such a neural event. Another alternative is to locate the essence of perception in the *subjective* domain, claiming that it is accessible only by introspection. In both cases, however, it can be argued that we *lose sight of* rather than determine the nature of the phenomenon we originally, on the basis of perceptual behavior, designate with the word 'perception'. In the reductionist case, one makes perception unrecognizable by determining it as an internal, subpersonal process rather than as an embodied system's skillful interaction with its surroundings. And in the subjectivist case, perception is taken away from the public domain altogether, seemingly making each individual the authority on what 'perception' denotes in their own case, thus eliminating the possibility of an objective theory of perception altogether. Hence it seems that, if we want perception to remain recognizable and to be discernable in the shared, observable world, the best alternative is to base one's metaphysics of perception on the phenomenon from which we learn the concept of perception in the first place, i.e., perceptual behavior.

Mutual illumination

Accepting this line of reasoning, my claim is that phenomenology dodges the charge of subjectivism and introspectionism and offers a view of perceptual behavior as *not* constituted solely of sensorimotor capacities. That it is necessary for phenomenology to have a response to such charges is evident not only from the criticism springing from usual anti-phenomenological suspects such as Daniel Dennett (2001), but also from the fact that phenomenologically informed enactivists occasionally lend themselves to subjectivist interpretations. One example that seems to directly contradict the emphasis on behavior advocated by D&O is the claim, quoted affirmatively by Thompson (2007b: 166), that "[d]iscussions [in cognitive science] are laden with terms that we understand *first and foremost by reference to our own internal states*: consciousness, attention, dreaming [etc.]" (Jack & Roepstorff, 2002: 333; my emphasis). Similarly, we find Varela (1996: 334) agreeing with John Searle in that "the ontology of the mental is an irreducibly first-person ontology" (1992: 95), which can be read as implying that it is introspection, not the observation of others' behavior, that gives the most genuine access to the mind.

While the presence of these and similar remarks in the enactivist literature signals the need for a clarification of phenomenology's status, it is not the case that the enactive enterprise actually is committed to a view of the mind as a purely subjective phenomenon that can be accessed only through introspection. On the contrary, as we have seen, the enactive notion of the mind as *embodied* means that it should be understood as neither purely subjective nor purely objective, but rather as a bodily structure of existence that integrates both the lived and the living body (Varela et al., 1991: xvi; Thompson, 2007: 248; Fuchs, 2020). This, further, means that although phenomenological analyses of experience on this view are indispensable for understanding the mind, they are not *sufficient*, and they do not represent the only 'genuine' access to mental phenomena. Hence, enactivists advocate the need for a "mutual illumination" (Varela et al., 1991: 15) between phenomenology and the sciences of life and mind.[156] For this to make proper sense, however, we need an understanding of phenomenology that accommodates the demand for outward criteria.

[156] In *Linguistic Bodies* (Di Paolo *et al*., 2018) the authors appeal to the phenomenological perspective as part of a *dialectical* approach to the mind. I see the notion of dialectics developed there as a much-needed contribution to enactive methodology, which develops and gives more substance to the idea of mutual illumination.

Beyond first-person phenomenology

If 'introspection' simply means to reflect on the first-personal character of experience, then introspection is undoubtedly a central part of the phenomenological project.[157] Phenomenological 'introspection' is however of a quite distinct nature. Part of this has to do with the idea of subject-world correlation that we've already encountered. That is, the phenomenologist's main domain is not subjects' mental states considered in isolation, but rather the ways in which subjects are intentionally *directed* towards the world. Hence, *correlational analysis* is a central piece of phenomenological methodology. With this approach, phenomenologists do not seek to uncover arbitrary traits of their own individual experiences, or to give the most fine-grained description possible of the qualitative 'feel' of various experiences. Rather, as Dan Zahavi observes, phenomenology is interested in "*invariant structures of experience*" (2017: 15; my emphasis). The focus on invariant structures means that the phenomenologist aims to produce analyses with a validity that reaches beyond her own internal states. In articulating a phenomenology of perception, for instance, I do not merely give a description of what it is like *for me* to perceive; I aim to uncover structures that are constitutively necessary for the appearance of the perceived human world as such. This is the intended significance of the phenomenological analyses in section 3: they presume to identify and describe some of the structures without which the world could not appear perceptually at all.

How can this be linked to the demand for outward criteria and the significance of perceptual behavior? Are not these invariant structures still first personal and as such not 'outward' in the required sense? To reply to this, we must consider the inherently *intersubjective* significance of lived experience. Another way to put the point about invariant structures is to say that these structures do not simply belong to how *I* individually perceive, but rather to how *one* – i.e., everyone who shares the human lifeworld – discloses the perceived world. Sure, the structures are described as they manifest 'subjectively', but what is thus described is something shared by all perceiving subjects insofar as we inhabit the same lifeworld. As such, phenomenology does not let it be up to each individual subject to decide their own truths about experience. *Qua* intersubjectively shared, claims about the structures of lived experience are subject to critique and revisions by a community of phenomenological researchers.

[157] A lot has been said to defend phenomenology against charges of subjectivism and introspectionism, and this is not the place to recount it all. For a couple of convincing attempts at more systematic clarifications of this issue, see Zahavi (2017) and Belt (2020).

There are at least two ways in which we can talk of outward criteria in this context. First, the intersubjective invariants of lived experience are manifested *outwardly* in the structures of the lifeworld that we share. We inevitably perceive the world as a *shared* world, perceivable by other perspectives than our own and as potentially relevant for others' existential projects (Husserl, 1970: 108). Following this thought, the evidence for the role of affectivity in perception is not in my internal states, but *in the things I perceive.* It is, to return to the example from section 3, *the cup itself*, as a phenomenon of the lifeworld, that shows me the role of affectivity in perception. Secondly, the ability to perceive the world as intersubjectively constituted in this way is enabled and facilitated by encounters with *other* subjects. It is the outwardly manifest behavior of other perceivers, tracing the meaningful physiognomy of our shared surroundings, that first initiates me into the human lifeworld. By empathically taking up the gestures of others, I incorporate an intersubjective mode of being, and in that way lay the basis for the perspective on my own lived experience that enables me to conceptualize myself as a subject among others and to search for the invariant structures we share (Zahavi, 1996). "[K]nowledge of our own mind," as Hans Jonas says, "is a function of acquaintance with other minds" (1980: 246). This amounts to a phenomenological rejection of the above-quoted claim that we understand notions of mentality "first and foremost by reference to our own internal states." I understand the notion of perception not primarily because I have a privileged first-personal access to what it is to perceive, but because perception is an intersubjective, publicly available phenomenon, visible in others' behavior. Even when I'm investigating the first-personal character of perception, I must understand perception as this kind of relation to the world that I also see others entertaining, and which has such-and-such outward, behavioral signs.

The structure of perceptual behavior

So, what are these outward signs of perception? In section 3 we saw that perception is characterized by an affectively constituted meaning that is not capturable by the resources at ST's disposal. A possible defense at that point was to claim that this dimension of meaning does not seem constitutively necessary for perception if we – as we should – ground our notion of perception in perceptual behavior. If D&O are right, perceptual behavior is constituted solely of a system's display of capacities for handling sensorimotor contingencies. If we actually look at how the capacity for perception is exhibited in the behavior of others, however, it seems to involve a specific, meaningful *way* of handling sensorimotor contingencies that still cannot be appropriately accounted for by the notion of sensorimotor capacities alone. "[B]odily persons,"

as Sara Heinämaa observes, "are individuated by their subjective modes of responding to what is given in experience […] As subjective expressions, our bodies […] are distinguished by their unique ways of moving, gesturing and acting in respect to what is given in their intentional environment" (2018: 539). Perceptual behavior, in other words, is behavior that *expresses subjectivity* in a distinctive way. When I experience others as perceivers, it is because their behavior displays not only the capacity for mastering sensorimotor contingencies, but for doing so in an affectively constituted way, responding to their surroundings as something that is significant *for them*. In short, perceptual behavior is revealed as such by displaying an intrinsic relation of meaning between perceiver and perceived. It is this meaningful subject-world co-definition that organizes and integrates subjectivity as a unified *structure of behavior* (Merleau-Ponty, 1963) as it is revealed both introspectively and in the experience of other perceivers. In this way, the phenomenological defense of the enactive notion of perception takes the form of establishing meaningful co-specification as essential to perception not only from the perspective of 'what it is like' to perceive, but also from the perspective of *what perceivers are like*.

We are now in position to better understand the enactive idea of a mutual illumination between phenomenology and other scientific perspectives on the mind. For, where we already in section 3 uncovered the perceiving subject as a vulnerable, material presence in the world, we have now seen that our very access to subjectivity is mediated by the worldly, behavioral presence of others. As such, our self-reflections – phenomenological and otherwise – are really reflections on forms of behavior, accessible introspectively but necessarily also bearing an outward significance. Hence, the subject matter of phenomenology spills into the world outside philosophers' acts of self-reflection and welcomes – if not *demands* – mutually illuminating exchanges with other approaches. In Merleau-Ponty's words,

> if the transcendental is intersubjectivity, how can the borders of the transcendental and the empirical help becoming indistinct? For along with the other person, all the other person sees of me – all my facticity – is reintegrated into subjectivity, or at least posited as an indispensable element of its definition. (Merleau-Ponty, 1964b: 107)

The theory of adaptive autonomy is enactivists' proposal for a framework that can facilitate and make sense of the circulation of phenomenological and empirical perspectives required to illuminate the nature of the mind: It captures the meaning-constitutive logic underlying both 'internal' and 'external' manifestations of subjectivity, and it does so in a way that can be given

a mathematical articulation with the resources of dynamical systems theory[158] and as such be implemented in a range of scientific approaches to the mind.

D&O's notion of the outward criteria for perception is here discovered to be too abstract, mistaking a necessary *part* of perceptual behavior – exercises of sensorimotor capacities – for the full phenomenon. Thus, their objection that the enactive account of perception is misaligned with the contexts in which we learn the notion of perception is deflected back to their own view: to say that perception is constituted solely of exercises of sensorimotor capacities is to fail to do justice to the structure of perceptual behavior, which from the perspectives we have entertained is revealed as expressive of an affectively lived and living bodily subjectivity. Rather than being redundant, the enactive notion of adaptive autonomy here seems adequate for illuminating what is going on: the dynamic generation and maintenance of a meaningful co-definitional system of perceiver and perceived.

In this way, we have seen how phenomenology escapes the charge of subjectivism, incorporates the significance of perceptual behavior, and leads to a rejection of D&O's idea of how perception is behaviorally displayed.

A last resort?

Before concluding, we need to address an objection that has probably struck some readers. Phenomenological considerations, I've argued, suggest that exercises of sensorimotor capacities are not sufficient for constituting perception, but is this really what has been shown? One possibility that seemingly remains open, is to claim that I've only provided support for the idea that adaptive autonomy is constitutive of *human*, perhaps *biological*, perception, but not that it is constitutively *necessary* for perception *as such*. D&O indicate that they could take this route by claiming that even if it were the case that autonomy is "*implied in perception itself*" in the case of living organisms, this would "not imply that [it] is *necessary* for experience" (2017: 400, orig. emphases). This, however, seems to only further detach their notion of perception from contexts of actual perceptual behavior. Given that every actual case of perception up until this point in the earth's history has been displayed in the behavior of living organisms (which D&O does not dispute), and perception in these cases *is* a living body's enaction of an existential context (which I've argued), how can the claim that autonomy is not

[158] Providing resources for making mathematical sense of self-organizing emergent systems characterized by circular part-whole forms of causality (Kelso, 1995; Juarrero, 1999), dynamical systems theory plays an essential role in enactivists' articulation of the theory of adaptive autonomy (Di Paolo *et al*., 2017).

necessary for perception be justified? Whatever one means by 'perception' here, it seems to be disengaged from the contexts that provide this term with a meaning in the first place.

But, the objection continues, isn't it at least conceivable that there could be a non-biological system that behaves exactly like a perceiver, and which it therefore would be reasonable to say that displays perceptual capacities? This kind of thought experiment plays an important role in D&O's dialectic (2017: 404). The first thing to say here is that it is not sufficient for a system to *mimic* perceptual behavior for it to actually display the full sense of perception. In Di Paolo's words, "[t]he movement of meaningful action can be convincingly emulated in an artificial system but this is not the same as the system acting meaningfully" (2005: 443). In short, a system acting a certain way because it is designed to imitate the perceptual behavior of a living organism is not the same as acting that way because one's existence is at stake in how one interacts with the environment. *If* an artificial system's behavior consistently displayed the structure of perception over a prolonged stretch of time, we would certainly need very good reasons to refrain from ascribing perception to it. This, however, is not a scenario that would support ST over the enactive view, for in such a case the system in question would also fulfill the behavioral criteria for adaptive autonomy.

10.5 Conclusion

If the enactive view of the mind wants to retain a viable position in cognitive science, it needs to continue to return to, refine, and develop its phenomenological arguments. In this article, I've tried to contribute to this task. First, by emphasizing the significance of the notion of enaction as co-definition and how it binds together the phenomenological and biological dimensions of the enactive view. Then, by revisiting some of the ways the phenomenological perspective motivates the idea that lived perception is constituted by the living body. Lastly, by outlining a phenomenological response to the demand for outward, behavioral criteria for our notions of mentality. Central here is the idea of the mind as a *structure of behavior*. This structure can be accessed and studied from a variety of perspectives, facilitating the enactive idea of mutual illumination, but what integrates and unifies them all is the meaningful direction of the behavior – a direction that cannot be accounted for by appeal to sensorimotor capacities alone.

Bibliography

Barandiaran, X. E. (2017). Autonomy and Enactivism: Towards a Theory of Sensorimotor Autonomous Agency. *Topoi, 36*(3): 409-430.

Barrett, L. F., & Bliss-Moreau, E. (2009). Affect as a Psychological Primitive. *Advances in Experimental Social Psychology, 41*: 167-218.

Belt, J. (2020). Phenomenological Skepticism Reconsidered: A Husserlian Answer to Dennett's Challenge. *Frontiers in Psychology, 11*.

Colombetti, G. (2013). *The Feeling Body: Affective Science Meets the Enactive Mind.* Cambridge: MIT Press.

Colombetti, G. (2018). Enacting Affectivity. In A. Newen, L. De Bruin, & S. Gallagher (Eds.), *The Oxford Handbook of 4E Cognition* (pp. 571-587). Oxford: Oxford University Press.

Damasio, A. R. (1999). *The Feeling of What Happens: Body and Emotion in the Making of Consciousness.* New York: Harcourt Brace.

De Jaegher, H., & Di Paolo, E. (2007). Participatory Sense-Making: An Enactive Approach to Social Cognition. *Phenomenology and Cognitive Science, 6*: 485-507.

Degenaar, J., & O'Regan, J. K. (2017). Sensorimotor Theory and Enactivism. *Topoi, 36*: 393-407.

Dennett, D. C. (2001). The fantasy of first-person science. In S. Wuppuluri, & F. Doria (Eds.), *The Map and the Territory: Exploring the Foundations of Science, Thought and Reality* (pp. 455-473). Cham: Springer.

Di Paolo, E. A. (2005). Autopoiesis, Adaptivity, Teleology, Agency. *Phenomenology and the Cognitive Sciences, 4*: 429-452.

Di Paolo, E. A. (2009). Extended Life. *Topoi, 28*(9).

Di Paolo, E. A. (2018). The Enactive Conception of Life. In A. Newen, L. De Bruin, & S. Gallagher (Eds.), *The Oxford Handbook of 4E Cognition* (pp. 71-94). Oxford: Oxford University Press.

Di Paolo, E. A., Buhrmann, T., & Barandiaran, X. E. (2017). *Sensorimotor Life.* Oxford: Oxford University Press.

Di Paolo, E. A., Cuffari, E. C., & De Jaegher, H. (2018). *Linguistic Bodies: The continuity between life and language.* Cambridge: MIT Press.

Di Paolo, E., & Thompson, E. (2014). The enactive approach. In L. Shapiro (Ed.), *The Routledge handbook of embodied cognition* (pp. 68-78). Oxfordshire: Routledge/Taylor & Francis Group.

Duncan, S., & Barrett, L. F. (2007). Affect is a form of cognition: A neurobiological analysis. *Cognition and Emotion, 21*(6): 1184-1211.

Fuchs, T. (2020). The Circularity of the Embodied Mind. *Frontiers in Psychology, 11*.

Gallagher, S. (2017). *Enactivist Interventions: Rethinking the Mind.* Oxford: Oxford University Press.

Gapenne, O. (2010). Kinesthesia and the Construction of Perceptual Objects. In J. Stewart, O. Gapenne, & E. A. Di Paolo (Eds.), *Enaction: Toward a New Paradigm for Cognitive Science* (pp. 183-218). Cambridge: The MIT Press.

Hanna, R., & Thompson, E. (2003). The mind-body-body problem. *Theoria et Historia Scientiarum: International Journal for Interdisciplinary Studies, 7*: 24-44.

Heinämaa, S. (2018). Embodiment and Bodily Becoming. In D. Zahavi (Ed.), *The Oxford Handbook of the History of Phenomenology* (pp. 533-557). Oxford: Oxford University Press.

Hurley, S. L. (1998). *Consciousness in Action.* Cambridge: Harvard University Press.

Husserl, E. (1970). *The Crisis of the European Sciences and Transcendental Phenomenology.* (D. Carr, Trans.) Evanston: Northwestern University Press.

Husserl, E. (1991). *On the phenomenology of the consciousness of internal time (1893-197).* (J. B. Brough, Trans.) London: Kluwer academic publishers.

Hutto, D. D., & Myin, E. (2012). *Radicalizing Enactivism: Basic Minds without Content.* Cambridge: The MIT Press.

Hverven, S., & Netland, T. (2021). Projection or encounter? Investigating Hans Jonas' case for natural teleology. *Phenomenology and the Cognitive Sciences*.

Jack, A., & Roepstorff, A. (2002). Introspection and cognitive brain mapping: from stimulus-response to script-report. *Trends in Cognitive Sciences, 6*: 333-339.

Jonas, H. (1966). *The Phenomenon of Life.* Evanston: Northwestern University Press.

Jonas, H. (1980). Change and permanence: On the possibility of understanding history. In *Philosophical essays* (pp. 237-260). Atropos Press.

Juarrero, A. (1999). *Dynamics in Action: Intentional Behavior as a Complex System.* Cambridge: The MIT Press.

Kee, H. (2018). Phenomenology and naturalism in autopoietic and radical enactivism: exploring sense-making and continuity from the top down. *Synthese*: 2323-2343.

Kelso, S. (1995). *Dynamic Patterns: The Self-Organization of Brain and Behavior.* Cambridge: The MIT Press.

Lewis, M. D. (2005). Bridging emotion theory and neurobiology through dynamic systems modeling. *Behavioral and brain sciences, 28*: 169-245.

Maturana, H. R., & Varela, F. J. (1980). *Autopoiesis and Cognition: The Realization of the Living.* Boston: D. Reidel.

Merleau-Ponty, M. (1963). *The Structure of Behavior.* Pittsburgh: Duquesne University Press.

Merleau-Ponty, M. (1964a). Eye and Mind. In *The Primacy of Perception* (pp. 159-190). Evanston: Northwestern University Press.

Merleau-Ponty, M. (1964b). The Philosopher and Sociology. In *Signs* (R. C. McCleary, Trans.: 98-113). Evanston: Northwestern University Press.

Merleau-Ponty, M. (2012). *Phenomenology of Perception.* New York: Routledge.

Myin, E. (2003). An account of color without a subject? *Behavioral and Brain Sciences, 26*: 42-43.

Myin, E., & O'Regan, K. J. (2002). Perceptual consciousness, access to modality, and skill theories: a way to naturalize phenomenology? *Journal of Consciousness Studies, 9*: 27-46.

Newen, A., De Bruin, L., & Gallagher, S. (2018). 4E Cognition: Historical Roots, Key Concepts, and Central Issues. In A. Newen, L. De Bruin, & S. Gallagher (Eds.), *The Oxford Handbook of 4E Cognition* (pp. 3-15). Oxford: Oxford University Press.

Noë, A. (2004). *Action in Perception.* Cambridge: MIT Press.

Noë, A. (2009). *Out of our Heads: Why you are not your brain and other lessons from the biology of consciousness.* New York: Hill & Want.

Noë, A. (2012). *Varieties of Presence.* Cambridge: Harvard University Press.

Noë, A. (2021). The enactive approach: a briefer statement, with some remarks on "radical enactivism". *Phenomenology and the Cognitive Sciences, 20*: 957-970.

O'Regan, J. K. (2011). *Why red doesn't sound like a bell: understanding the feel of consciousness.* Oxford: Oxford University Press.

O'Regan, J. K., & Noë, A. (2001). A sensorimotor account of vision and visual consciousness. *Behavioral and Brain Sciences, 24*: 883-917.

Riener, C., Stefanucci, J., Proffitt, D., & Clore, G. (2011). An effect of mood on the perception of geographical slant. *Cognition and Emotion, 25*(1): 174-182.

Salmela, V., Lumikukka, S., Söderholm, J., Roope, H., Lahti, J., Ekelund, J., & Isometsä, E. (2021). Reduced visual contrast suppression during major depressive episodes. *Journal of Psychiatry and Neuroscience, 46*(2): E222-E231.

Searle, J. (1992). *The Rediscovery of the Mind.* Cambridge: The MIT Press.

Stapleton, M., & Froese, T. (2016). The enactive philosophy of embodiment: From biological foundations of agency to the phenomenology of subjectivity. In M. García-Valdecasas, J. I. Murillo, & N. F. Barrett (Eds.), *Biology and subjectivity: Philosophical contributions to non-reductive neuroscience* (pp. 113-129). Cham: Springer.

Stewart, J., Gapenne, O., & Di Paolo, E. A. (Eds.). (2010). *Enaction: Toward a New Paradigm for Cognitive Science.* Cambridge: The MIT Press.

Thompson, E. (2007a). *Mind in Life: Biology, Phenomenology, and the Sciences of Mind.* Cambridge: Harvard University Press.

Thompson, E. (2007b). Look again: Phenomenology and mental imagery. *Phenomenology and the Cognitive Sciences, 6*: 137-170.

Thompson, E. (2018, January 11). Review: Evolving Enactivism: Basic Minds Meet Content. *Notre Dame Philosophical Reviews*. Retrieved November 20, 2021, from http://ndpr.nd.edu/reviews/evolving-enactivism-basic-minds-meet-content/

Varela, F. J. (1979). *Principles of Biological Autonomy.* New York: Elsevier North Holland, Inc.

Varela, F. J. (1996). Neurophenomenology: A methodological remedy for the hard problem. *Journal of Consciousness Studies, 4*: 330-49.

Varela, F. J. (1999). The Specious Present: A Neurophenomenology of Time Consciousness. In J. Petitot, F. J. Varela, & B. R.-M. Pachoud (Eds.), *Naturalizing Phenomenology* (pp. 266-314). Stanford: Stanford University Press.

Varela, F. J. (2011). Preface to the second edition of "De Máquinas y Seres Vivos - Autopoiesis: La organización de lo vivo". *Systems Research and Behavioral Science, 28*(6): 601-617.

Varela, F. J., & Depraz, N. (2005). At the Source of Time: Valence and the constitutional dynamics of affect. *Journal of Consciousness Studies, 12*(8-10): 61-81.

Varela, F. J., Thompson, E., & Rosch, E. (1991). *The Embodied Mind: Cognitive Science and Human Experience.* Cambridge: MIT Press.

Villalobos, M., & Ward, D. (2016). Lived experience and cognitive science: Reappraising enactivism's Jonasian turn. *Constructivist Foundations, 11*: 204-233.

Ward, D., Silverman, D., & Villalobos, M. (2017). Introduction: The Varieties of Enactivism. *Topoi, 36*: 365-375.

Weber, A., & Varela, F. J. (2002). Life after Kant: Natural purposes and the autopoietic foundations of biological individuality. *Phenomenology and the Cognitive Sciences*: 97-125.

Wehrle, M. (2020). Being a body and having a body. The twofold temporality of embodied intentionality. *Phenomenology and the Cognitive Sciences, 19*: 499-521.

Wittgenstein, L. (2009). *Philosophical Investigations* (4. ed.). (G. Anscombe: Hacker, & J. Schulte, Trans.) Oxford: Blackwell Publishing Ltd.

Zahavi, D. (1996). Husserl's Intersubjective Transformation of Transcendental Philosophy. *Journal of the British Society for Phenomenology, 27*(7): 228-245.

Zahavi, D. (2017). *Husserl's Legacy.* Oxford: Oxford University Press.

11
Projection or encounter?
Investigating Hans Jonas' case for natural teleology (A3)*

This article discusses Hans Jonas' argument for teleology in living organisms, in light of recently raised concerns over enactivism's "Jonasian turn." Drawing on textual resources rarely discussed in contemporary enactivist literature on Jonas' philosophy, we reconstruct five core ideas of his thinking: 1) That natural science's rejection of teleology is methodological rather than ontological, and thus not a proof of its non-existence; 2) that denial of the reality of teleology amounts to a performative self-contradiction; 3) that the fact of evolution makes it implausible that only humans actualize purpose; 4) that the concept of metabolism delimits and gestures towards beings performing purposive activity; and 5) that concrete encounters with living organisms are indispensable for the judgment that they are purposive. Lastly, we draw attention to how Jonas' understanding of teleology and inwardness in nonhuman life in terms of degrees of identity with human life poses a problem for his view. In this way, we hope to clarify what Jonas, as an important source of inspiration for the enactivist project, is proposing.

11.1 Introduction

More than half a century after the publication of his seminal book, *The Phenomenon of Life* (Jonas, 1966), Hans Jonas' existential biology continues to be discussed in a variety of fields, ranging from cognitive science to environmental philosophy. In the former (which is our focus), his influence is mainly felt within the enactive paradigm.[159] Here, Jonas' phenomenological interpretation of metabolism in terms of freedom, self-concern, and intrinsic purpose has become a central source of inspiration for enactivism's project of naturalizing the mind by way of the biological notions of autopoiesis and autonomy. In short, one here aims to naturalize the directedness and meaningfulness central to the experiential dimension of mind by rooting it in a view of biological nature as itself normative and purposive.

* Co-authored with Sigurd Hverven. See 'Note on publications and authorship' above.

[159] Enactive approaches are characterized by an emphasis on the role of embodied activity for cognitive processes. By "enactivism" we think primarily of the position some have labeled "autopoietic enactivism" (Hutto & Myin, 2013; Ward et al., 2017) due to the significance it gives to the notion of autopoiesis and more generally to the thesis of mind-life continuity. Proponents of the "autopoietic" branch of enactivism have, however, argued that the name is misleading, partly because autopoiesis in their view is only one specific and minimal manifestation of the more general phenomenon of autonomy (e.g. Barandiaran, 2016; Thompson, 2018). One could also argue that the "autopoietic" strand has a special claim to the enactivist name, given that it was researchers of this stripe that coined the phrase in the context of cognitive science in the first place (Varela et al., 1991).

This "Jonasian turn" in enactivism has been controversial. Some object, stating that the very idea of giving purpose a place in nature is unscientific. Others are sympathetic to the idea but argue that Jonas does more harm than good, insofar as his approach seems committed to a problematic anthropomorphism.[160] In the following, we will explore the resources Jonas has for responding to these challenges. Importantly, we do not claim that the success of the enactive project is contingent on Jonas' ability to defend himself. Though Jonasian concepts figure centrally in enactivists' accounts of mind-life continuity, these accounts are not "Jonasian" in a dogmatic sense but have evolved significantly beyond their "origin" and rely on their own arguments and research. Nevertheless, we believe that it can be both illuminating and helpful at the current point in enactivist discourse to clarify what Jonas is proposing.

Our main question is: How does Jonas argue for the reality of immanent teleology in living organisms? Here immanent teleology, which we will use interchangeably with intrinsic purpose or just purposiveness, is meant to express the idea of self-generated (hence immanent/intrinsic) aims oriented in light of interests, values, or meanings pertaining to one's form of life. In Jonas, as well as in enactivism, the ascription of immanent teleology to living organisms involves two distinct claims. The most basic is that life is purposive in what Di Paolo labels "the Kantian sense of mutual generative relations" (2005: 433) between the parts of an organism, and between the parts and the organism as a whole, so that the individual living organism is the purpose of its own self-production. The second rests on this idea but goes further by positing that this purposiveness in some sense is manifest *for* the organism itself, forming an interested or concerned "*point of view*" (Weber & Varela, 2002: 116, orig. emphasis). In the enactivist account of these matters, Di Paolo's argument that adaptivity is required in order to make the step from the first claim to the second – which in enactivism amounts to the step from autonomy/autopoiesis to sense-making – represents a significant development (Di Paolo, 2005).[161] While some (Barrett, 2017) argue that more is required to make this anchoring of subjectivity in natural processes satisfactory, we will not engage explicitly with this question here. Our concern lies primarily with Jonas' arguments and their reception (and, in some cases, lack thereof) in the enactivist context. We are, however, hopeful that this can bring more clarity to aspects of the more general, contemporary debate on normativity and teleology in enactivism as well.

[160] Yet others, like Kee (2018), argue that enactivism should adopt a Merleau-Pontian rather than Jonasian take on mind-life continuity, which in Kee's view has the consequence of reserving the notion of sense-making for sentient animals.
[161] See also Thompson (2007: 143).

How can an ascription of teleology to life be justified? One central argument, at least from earlier enactivist texts, is precisely the "anthropomorphic" inference associated with Jonas, namely that it is through experiences of purposive life *in ourselves* that we become able to recognize teleology in living others.[162] Another claim is that the science of living systems is able to somehow prove the existence of natural purposes (Di Paolo et al., 2017). While that may be so, it seems that this latter possibility presupposes an idea of what counts as evidence of purposiveness in the first place, which, with the lack of other options, brings us back to the anthropomorphic inference. Even if this might not exhaust the possibilities currently available to enactivists, it seems clear to us that this is an area where more work is needed.[163] An exploration of Jonas' arguments will hopefully illuminate both hidden challenges to and forgotten resources for establishing teleology in nature.

We have identified and reconstructed five ideas central to Jonas' position.[164] The first three are negative arguments (refuting or challenging anti-teleological views). Here we respond to Villalobos and Ward's claim (Villalobos & Ward, 2016) that immanent teleology is incompatible with a naturalistic worldview by outlining Jonas' arguments that natural science's rejection of natural purpose is methodological rather than ontological, and as such not a proof of its non-existence (11.2), that denial of immanent teleology is a performative self-contradiction (11.3), and that the fact of our shared evolutionary history makes it *prima facie* plausible that there is ontological continuity rather than separation between human and nonhuman organisms (11.4). Further, we examine Jonas' defense against those who are sympathetic to the teleological view of life, but who believe that his philosophy fails to properly establish such a view (Barbaras, 2010; De Jesus, 2015). Specifically, we elaborate and clarify the significance of metabolism in Jonas' argument for immanent teleology (11.5), and emphasize the role of bodily experience and encounters with others in his account of our ability to grasp the purposiveness of nonhuman organisms (11.6).

We believe that these five steps together make Jonas' case for natural purpose stronger than what is assumed in contemporary enactivist literature, but we are not under the illusion that his account is flawless. In section 11.6 we address what we see as an ambiguity regarding

[162] As we will show later, this reasoning is explicit in Weber and Varela (2002) and at least strongly suggested by Thompson (2007).
[163] Enactivist work on empathy, emotions, and perception of others is a more promising option, and bears similarities to some of the resources we find in Jonas. See especially Colombetti (2014).
[164] While the enactivist literature on Jonas draws mainly on a couple of chapters of *The Phenomenon of Life* (1966), our reading is based on a more thorough reading of that book, as well as on his *Organism and Freedom* (2016), *The Imperative of Responsibility* (1984), and a couple of shorter articles.

the issue of anthropomorphism that both Jonas and some of his enactivist defenders seem to struggle with. And though we conclude that Jonas has the resources to overcome this ambiguity in favor of a view where the perception of others is indispensable, we end our paper by drawing attention to an aspect of his account that remains problematic (11.7): That his criterion for ascribing purposiveness and mind to nonhuman others seems to be based too much on the degree to which they *resemble* the human, thus overlooking the significance of *difference* in our encounters with other life forms. In this way, we conclude by highlighting a challenge central to anyone aiming to establish a teleological view of nature.

11.2 Science and teleology

According to Mario Villalobos and Dave Ward, Jonas advocates an "antiscientific" anthropomorphic approach to the examination of life (Villalobos & Ward, 2016: 205). In short, their argument is that natural science proves that there is no such thing as purpose in (nonhuman) nature, and thus that Jonas' thesis of immanent teleology in living organisms conflicts with scientific evidence and springs from a problematic anthropomorphic projection. Thus, they claim that Jonas "thinks that in the conflict between anthropomorphism and modern science, what is wrong is modern science, not anthropomorphism" (ibid.: 207). This, however, is a misrepresentation of Jonas' view. His point is not that philosophers or scientists must "choose between" (ibid.) natural purposes and natural science, or that modern science can only be exercised when an ontology that deprives nature of natural purpose is accepted. This leads us to the first step we have identified in Jonas' case for teleology in nature, which, as mentioned above, is a negative argument: a rejection of the claim that natural science has proven that teleology does not exist in the world. Jonas writes: "Regarding final causes, we must observe that their rejection is a methodological principle guiding inquiry rather than a statement of ascertained fact issuing from inquiry. […T]he exclusion of teleology is not an inductive result but an a priori prohibition of modern science" (1966: 34).

Jonas' claim is that modern natural science examines nature *as if* it can be explained by efficient causes alone, but this is a methodological approach, not a result of research. To claim that science demonstrates that the world is devoid of purpose is to confuse methodology with ontology. If science is understood as explaining nature according to laws that make it predictable to humans and facilitated for controlled manipulation, using mathematics as the

foremost aid, final causes are outside its scope. As Jonas writes in *Organism and Freedom*[165]: "final causes are not measurable and would for this reason alone be outside the scope of scientific verification" (2016: 33).

Villalobos and Ward's critique of Jonas seems to rely on the kind of confusion of scientific methodology and ontology – where one makes ontological judgments based on "a methodological principle guiding inquiry" (Jonas, 1966: 34) – that Jonas warns against. The insight lost on Villalobos and Ward can be elaborated as follows: Scientific experiments or examinations (especially physics) are designed to gain insight into (some of) the efficient causes at work in the object; final causes are excluded as a possible "answer" to this specific way of "questioning" the object. This is, of course, a sound and useful approach if the scientist is aware that his/her specific way of "asking" – examining – limits the scope of possible "answers." If s/he takes the "answers" provided by science to be telling the whole truth about the object in question, however, s/he is guilty of ignorant abstraction, or objectification. For instance, in science's search for lawlike patterns, what is *particular* in the object – only occurring once, at this point in time and space and never again – is abstracted away. This is necessary and unproblematic as long as one is aware of the level of abstraction, but to mistake such abstractions for concrete objects is a vice of scientism. One of Jonas' philosophical sources can be helpful in elaborating this point: Alfred North Whitehead warns against what he calls "the fallacy of misplaced concreteness" (Whitehead, 1925: 51). The fallacy consists in taking abstractions to be concrete, to confuse the map with the terrain (Griffin, 1998: 117–124). In our view, Villalobos and Ward commit this fallacy by assuming that the natural-scientific picture of the world is the concrete world.

From this we can see that Jonas' openness to natural teleology is not "antiscientific" unless one is committed to the view that only natural-scientific knowledge amounts to proper knowledge about nature. If this kind of scientism is rejected, Jonas' view is compatible with science. His point is, as he writes in *The Imperative of Responsibility*, that "we should keep ourselves open to the thought that natural science may not tell the whole story about nature"

[165] In the introduction to *The Phenomenon of Life*, Jonas says that the systematic statement of his philosophy of organism and life "has yet to reach its final shape" (1966: 6). Yet he published no systematic monograph on the theme during his lifetime. However, more than a decade *before* the publication of *The Phenomenon of Life*, Jonas had already formulated a more systematic and worked-through monograph, titled *Organism and Freedom*. Jonas sent this manuscript to a couple of American publishers, but it was rejected. Therefore, Jonas decided to rework and publish parts of the book in essays that until recently were known as the most fully articulated formulation of his philosophy of organism. In 2016 this original manuscript was published as a part of the collected works of Jonas.

(Jonas, 1984: 8). This view is compatible with saying that natural science tells crucial parts of this story.[166] Jonas' view is antiscientistic, but not antiscientific. Note here that Jonas does not seem to argue that science *should* incorporate natural purpose in its theories, but rather that we should allow for a sort of pre-scientific knowledge (associated, as we will see later, with concrete bodily experiences of encounter) to inform our natural ontology. In some sense, this is less radical than what we find in contemporary enactivist literature, which, without denying the importance of pre-scientific lived experience, also aims to find a place for natural purpose *within* a scientific framework.[167] If it is the case, as these enactivist authors argue, that scientific inclusion of purpose is both possible and fruitful, this would surely pose a further challenge for Villalobos and Ward's purpose-exclusive naturalism, but since this argument is not in Jonas' repertoire, we will not pursue it here.

However, in order to see that the non-teleological picture of the world leaves something out (and hence is an abstraction), Jonas needs an argument for the reality of purposiveness in concrete reality. We get into that from section 4 onwards. It does, after all, not follow from rejecting that science has proven the non-existence of natural purpose that there in fact *is* purpose at work in nature, or more specifically in nonhuman organisms.

Let's consider a possible objection to Jonas' claim that science's exclusion of teleology is methodological rather than ontological before we move on to his next argument. Even if we accept that science has not directly *disconfirmed* the reality of natural purpose, is it not the case that the (apparently) obvious success of its non-teleological approach to explaining and describing reality *indirectly* means that the concept of teleology is obsolete? This question shifts the burden of proof back to the defenders of the teleological view: Granted that science does fine without the concept of natural purpose, *you* must tell *us* why it is still needed. Bracketing the possibility that purpose can operate as a fruitful scientific concept, there are at least two good responses to this objection. The first response, which we will not spend much time on here, is to argue that scientific approaches to life already implicitly *presuppose* a

[166] The fact that Jonas makes concepts from natural science, such as "metabolism" and "irritability," central in his philosophical understanding of life indicates that his position in general is not antiscientific.

[167] This, after all, is a key element in the enactivist account of autonomy and autopoiesis that was proposed by Weber and Varela (2002) and taken up and further developed by Di Paolo (2005) and Thompson (2007). For a recent, promising enactivist attempt to scientifically ground purposiveness, see Di Paolo et al. (2017). The argument that science needs to somehow incorporate the reality of purpose has also been made outside the enactivist context. For an example of such an argument that even precedes Jonas' writings, see Köhler (1966). For a more recent attempt, see Juarrero (1999).

teleological view.[168] The second response is to highlight the inconsistency of rejecting the reality of something that is so clearly a presupposition for human activities, which is what Jonas does in the next step we have identified.

11.3 Performative self-contradiction

Here, Jonas tries to establish that the reality of immanent teleology cannot be denied without a practical contradiction. How does he defend this claim?

He does so by revealing the contradiction involved in denying the validity of our own experience of purpose. Jonas makes the point that someone who denies the reality of immanent teleology nonetheless cannot help but act as if what they deny actually is real, and cannot help but approach other humans as if they act with purpose and have the ability to recognize their purposive actions. After all, a human being that tries to defend such an anti-teleological view cannot help but argue with a specific goal in mind: to convince others. But then purposiveness is enacted by the very same subject in the process of denying its existence. This is an example of a performative contradiction – one affirms in practice what one denies in theory.[169] Hence, Jonas concludes that a human being that takes him or herself seriously and that does not consider him or herself as a unique ontological exception "cannot but give nature credit for bringing forth goal-causality, and hence regards the latter as not completely foreign to the former" (Jonas, 1984: 71).

For Jonas, therefore, bodily experiences of being alive *are* valid testimony of what human life is. First-hand experience is of ontological importance. To deny or ignore this testimony of reality is to deny the closest, most immediate *empirical evidence* we have. The most influential variant of a view that denies this evidence, according to Jonas, is modern mechanistic materialism.[170] When taken as a comprehensive ontology, materialism sacrifices this primordial empirical evidence in favor of a generalization of the concept of extended

[168] This is, arguably, Kant's view in *Kritik der Urteilskraft* (1790), as well as Merleau-Ponty's in *Structure of Behavior* (1963), and it can also be found in Jonas (see fn. 189).
[169] By arguing this way, Jonas seems to agree with Whitehead: "Whatever is found in practice must lie within the scope of the metaphysical description. When the description fails to include practice, the metaphysics is inadequate and requires revision" (Whitehead, 1978: 13).
[170] Jonas conceives of materialism as an account of reality where "blind," "lifeless" matter is regarded as the most real, and where the aspects of reality that can be measured and quantified are conceived as primary. Thus, materialism denies genuine validity to embodied experience of purposive actions. It labels them as purely "subjective" phenomena. Jonas' claim that this is the dominant ontology in modern thinking is supported by more recent studies in philosophy of nature (Evernden, 1993: 18).

matter, which is based on other experiences and empirical evidence. Thus, as a comprehensive ontology, it is not supported by all the empirical evidence available to us.

With these considerations, Jonas establishes that we must admit that there is such a thing as immanent teleology in the world, at least in *human beings*.[171] Here we can briefly note two things. First, it is still possible for the materialist to hold on to a non-teleological view in face of this argument, by insisting that the experience of purpose in human life and communication is a mere illusion. This, however, comes at the price of ultimately denying that any of our utterances are really aimed at communicating anything at all, and hence are completely devoid of meaning, which, besides being highly problematic in itself, seems to lead us back to the charge of self-contradiction. Secondly, while this step in Jonas' argument is surely anthropo*centric* in the sense that it is exclusively based on human experience, it does not yet amount to anthropo*morphism* insofar as the ascription of teleology does not extend beyond the human domain.

This step is, in other words, insufficient as an argument for teleology in *all* organisms. It is still possible to hold that the teleology in human beings is a unique exception, without relevance to the understanding of the rest of nature. This kind of view is more or less explicit in Villalobos and Ward's equation of the positing of teleology in nonhuman organisms with *anthropomorphism* (Villalobos & Ward, 2016),[172] and is stated more directly by Villalobos and Palacios (2019) and Abramova and Villalobos (2015). The challenge that immediately arises here, however, is how to account for this alleged essential difference between human and nonhuman organisms. The mentioned authors (like many others) do this by pointing to human *language* as that which enables some sort of teleology to emerge. For instance, in Abramova and Villalobos' view, living beings are "essentially machines composed of chains of deterministic processes" where "any selection or directedness is only in the eye of the observer," but the emergence of language nonetheless assures "a domain in which both content and intentionality have their place" in the life of humans (Abramova &

[171] Jonas only hints at how the purposiveness of the activity of the one solitary human subject is claimed to be evidence of purposiveness in *other* humans: He points out that the one subject *becomes* a subject and acquires self-knowledge only as a member of a human community where others are recognized as purposive subjects (Jonas, 1966: 186). His view on this matter is more fully spelled out in the essay "Change and Permanence" (which we comment on in 11.6.3).

[172] Villalobos and Ward even claim that "Jonas' philosophy of life has been recognized, […] by Jonas himself, as an anthropomorphic philosophy" (2016: 205). This ignores Jonas' own warnings against anthropomorphism: "The evidence we find in ourselves is an integral part of the evidence concerning life which experience puts at our disposal. *That it must be used critically to avoid the pitfalls of anthropomorphism goes without saying*" (Jonas, 1966: 91, our emphasis).

Villalobos, 2015: 666–667). Although Jonas would agree that language and intersubjective relations enable uniquely human traits,[173] setting up this sort of absolute difference seems to both ascribe to language an explanatory responsibility it can hardly fulfill, and assume an unjustifiably huge gap between human and nonhuman life. After all, all earthly life shares both a common evolutionary history and core organizational processes (metabolism), and so it seems *prima facie* reasonable to hold that relations between features of different species are primarily characterized by *continuity* and difference of *degree*, rather than of absolute separation. This is the topic of the next two steps of Jonas' argument for natural purpose.

11.4 Evolution and continuity

In order to challenge the view that the evidence of teleology in humans is only valid for the ontological status of human beings, and nothing else, Jonas refers to Darwin's theory of evolution. From Jonas' point of view, Darwin's most important contribution to the understanding of life was to establish "*continuity* of descent" between humans and other organisms (Jonas, 1966: 57, orig. emphasis). Jonas makes both a negative and a positive argument based on this continuity. Negatively, he claims that the Darwinian case for continuity between humans and other living beings challenges the view that human, purposive being is an ontological exception. One may still argue that there is a leap in the evolutionary development between other animals and humans, a leap from no purposiveness to all purposiveness, but the credibility of such a leap is greatly challenged by the continuity thesis of evolution. To the extent that the two first steps in our reconstruction of Jonas' argumentation for natural purpose are accepted, the Darwinian theory replaces the onus of proof, from the view that there is purposiveness in nature to the view that human purposive life is an exception from an otherwise mechanical and "blind" world of extended matter. In Jonas' words, "evolutionism undid Descartes' work more effectively than any metaphysical critique had managed to do" (ibid.) by making dualism, dividing humans from the rest of nature, incredible as a starting point for philosophical reflection.

Jonas' positive argument goes like this: Against the backdrop of evolutionary relatedness, the evidence from human bodily experience becomes a source of prejudice (in Hans-Georg Gadamer's sense) for the interpretation of living beings in general. Jonas writes that in light of the theory of evolution, "the province of 'soul', with feeling, striving, suffering

[173] See 11.6.3. This view is shared by many enactivists. For a recent example, see Gallagher (2020).

[and] enjoyment [, can be] extended again, by the very principle of continuous graduation, from man over the kingdom of life" (ibid.: 57). Take notice of the statement of scope here: Jonas draws the line of the emergence of "soul" ("inwardness") and "striving" ("purposiveness") at the beginning of life. Even in the most basic forms of life, even "the single cell" (ibid.: 99), humans may find something reminiscent of what we experience in ourselves, albeit to a very small degree.[174] Take notice too of the expression "continuous graduation": Jonas indicates a view on purposive action and inwardness as distinguishable in degrees, and that the degrees decrease the farther away from human beings one gets. That is to say, an organism is a purposively acting subject to the degree that it is similar to a human subject.

Is this positive extension of "inwardness" and purposiveness from human beings to the rest of living nature a case of anthropomorphism? At least it may seem to reveal a problematic tendency in Jonas' philosophy for seeing humans as the prototype of purposive being, so that purposiveness in other organisms is understood in "degrees" relative to the human standard. If that is the case, this is a shortcoming of Jonas' view. We will return to this issue below (11.7).

Apart from Jonas' positive argument from evolution outlined just now, we have hitherto only considered his negative claims – aimed not at establishing that there is immanent teleology in nonhuman organisms, but rather at questioning the grounds for rejecting such a claim. While this strategy is apt for motivating the possibility of natural purpose, we are now in need of a more substantial way of making sense of *how* teleology is actualized in the natural world. Thus, we move to one of Jonas' core arguments *for* natural purpose: his analysis of *metabolism*.

11.5 Metabolism

11.5.1 Jonas' analysis of metabolism

Most readers of Jonas agree that metabolism is the pivotal concept in his philosophy of organism, and it has been understood as central in his extension of inwardness and purposiveness to nonhuman beings. Metabolism denotes the organism's continuous exchange of matter with its surroundings. This continuous throughput of matter and energy renews tissue

[174] Here we find Jonas' expression of the Strong Mind-Life Continuity Thesis, a core idea of enactivism (Thompson, 2007: 128). Regarding the co-manifestation of purposiveness, inwardness, and organic life, he writes: "there is no organism without teleology; there is no teleology without inwardness" (Jonas, 1966: 91) and "[w]here else than in the beginning of life can the beginning of inwardness be placed?" (ibid.: 58). While these and other formulations suggest that Jonas sees life, purposiveness, and inwardness as strictly codependent, other formulations seem to indicate the possibility of purposiveness beyond subjectivity and inwardness (ibid.: 2, 4). We will leave it open here whether Jonas allows for purposiveness in non-subjective, over-individual beings (such as species, ecosystems, the biosphere or being in general).

and keeps the organs and vital processes going. This peculiar mode of being is common to all organisms, but does not take place in lifeless things.[175] Hence, at a basic level, there is a common way of organizing matter in all organisms. They have a common physical constitution, or to be more specific, a common physical processual dynamic. Jonas' way of extracting a description of the self-organizational, autonomous features common to all life and making it "the core of the organism's ontology" is, in the words of Weber and Varela, "where his analysis joins directly with the autopoiesis approach" (Weber & Varela, 2002: 112). Moreover, Weber and Varela follow Jonas' lead in giving metabolism/autopoiesis an existential interpretation in terms of freedom, identity, and purpose, which is considered the first decisive sign of enactivism's "Jonasian turn."[176]

Jonas' interpretation of metabolism leads him to claim that there is a specific ontological principle of *identity* at work in organisms: In organic beings, identity is linked to the dynamic *form* that maintains itself through metabolism (Jonas, 1966: 76–83). The form is a principle of organization, an *eidos*, that continuously actualizes itself in new matter and energy. Jonas draws a line between this organic identity and the identity of a stone or a drop of water. Such lifeless things can be analyzed as aggregates, reducible to the immediate identities of the parts. It may be that an atomistic figure of thought is adequate when dealing with lifeless things: They appear to be nothing more than the sum of their parts, and their parts are self-sufficient and independent of the whole they (temporarily) are parts of, as well as of relations to other parts. The identity of a lifeless thing, therefore, may be nothing but the sameness of its material parts over time.[177] "Organic identity, however, must be of a different nature altogether" (ibid.: 82). In organisms, the whole is something other than a mere aggregate. It is concrete and actual unity in a manifold. The wholeness is an "active performance" or achievement. "This active self-integration of life alone gives substance to the term 'individual'"

[175] Our claim concerns the *metabolic* mode of being. Nonliving dissipative structures such as tornados and candle flames also keep their form through a throughput of matter and energy. According to Di Paolo et al. (2017: 127), it is still an open question whether such structures should be considered self-maintaining *individuals* in a way that displays the basic "Kantian" form of teleology mentioned in the introduction. However, in contrast to metabolic systems, "nothing so far indicates that these [nonliving dissipative] systems have the capacity to adaptively regulate their interactions with the environment" (ibid.), which is Di Paolo's (2005) suggestion for a capacity that would ground the second, sense-making form of teleology in a notion of natural organization.

[176] Maturana and Varela's (1980) original theory of autopoiesis, though placing the emphasis on metabolic identity as a definition of life in common with Jonas, was explicitly non-teleological. See Barrett (2017) for an outline of the development of what he calls the "normative turn" in enactivism.

[177] Some of Jonas' formulations regarding lifeless things seem to presuppose a classic, mechanistic view of physics, and a view of biology as essentially an application of this view onto living beings. This is most evident in *Organism and Freedom* (Jonas, 2016: 1–5, 45–58).

(ibid.: 79). An organism achieves concrete individuality through its own activity. Its individuality is not a mere projection from a human spectator, nor a construct; the concept of the individual organism is "ontological," not merely "phenomenological" (ibid.). Hence Jonas interprets metabolism as a sign of some sort of *action* or *performance*. At every moment in time, the organism, in exchange with its environment, is both the producer and the product of its own continuous activity, and the organism *is* this purposive process or activity.

While we cannot go into all the details of his analysis of metabolism here,[178] it is important for our purposes to notice that Jonas considers metabolism a marker of *active* striving. Organisms are *concerned*, he claims, with a nod to his former teacher Martin Heidegger and the concept of *Sorge*.[179] However, in Jonas' philosophy, it is not just *Dasein* – humans – that are concerned with their own being; all organic beings are concerned with this (ibid.: 84, 86). Their very activity and striving to be alive show that life matters to them.[180]

From this concern (or striving), it follows that the mechanistic pattern of explanation, "the external linear time-pattern of antecedent and sequent, involving the causal dominance of the past, is inadequate" (ibid.: 86). For active organic wholes, the future, not the past, is the dominant time horizon: "life is essentially what it is going to be and just becoming" (ibid.). Accordingly, organisms cannot only be understood as products of efficient causes. They must also be understood *teleologically*, as striving towards future being. Organisms have a *telos* of their own, which is not an end state; the *telos* is rather the ongoing processual form itself. The *telos* – end – of the organism is never fully achieved, once and for all, as a static end station (in that case, death would be the purpose of life). The *telos* is rather the maintenance of a contingent process that must be re-actualized repeatedly, always with the possibility of failing. Therefore, finitude and vulnerability are essential characteristics of organic life.[181]

[178] See Hverven 2020 for an extended elaboration of this interpretation of Jonas' analysis of metabolism.
[179] While "concern" for many might be associated with a state of conscious awareness, this is not necessarily the case here. Rather, in the existentialist tradition Jonas is trained in, it connotes a form of practical engagement that usually is pre-reflective and not present in awareness.
[180] It is this step, from metabolic self-production (where the system is the purpose of its own activity) to *concern*, which Di Paolo (2005) argues lacks the notion of adaptivity in order to be coherent.
[181] This does not mean that finitude and vulnerability need to be exclusive to organisms. But in our opinion, it seems reasonable to say that the finitude and vulnerability of organisms stand out – in contrast to nonliving entities – because they *matter* to the structure itself *qua* a self-concerned system. See Froese (2017) for an articulation of the significance of precariousness and death in the enactivist case against computationalism about mind and life.

11.5.2 Critique of Jonas' argument from metabolism

The characteristics above raise one big question: What is the basis for this interpretation of metabolism? Critics of Jonas (Barbaras, 2010: 94; Villalobos & Ward, 2016; Yolton, 1967) read the analysis of metabolism in *The Phenomenon of Life* as resting on a dubious premise: that life first of all is identified in the mere *external* process of metabolism. Then action, teleology, sensitiveness, concernedness – in short, "*inwardness*" – are somehow found in this external process. Accordingly, the critique goes, it is an anthropomorphic "theory of projection": Based on our own inner experience of being acting, living individuals, we have "inside knowledge" and hence we can "interpolate" from the mere external evidence of metabolism to the internal, experiencing life of an organism (Barbaras, 2010).[182] Thus, we humans, who know purposiveness and inwardness from within, project these qualities onto extended metabolizing entities and take inwardness and purposiveness to be at work in them, as in ourselves. However, as Renaud Barbaras points out, "Nothing in the domain of exteriority justifies such an interpolation" (2010: 94). As we understand Barbaras, he uses "exteriority" as a synonym for the Cartesian *res extensa* – nature conceived as purely mechanical, quantitative, non-subjective substance.[183] Hence, Barbaras seems quite right in claiming that mere "exteriority" is not "inward," not mental, not purposive. By definition, it is lifeless and cannot *express* life. In such an interpretation of Jonas, his position depends on a dualism between extendedness and "inwardness." In Barbaras' words, Jonas maintains "the split between interiority and exteriority (…) and that is a consequence of a resolutely materialist ontology. Life is identified first of all in the domain of exteriority, via the concept of metabolism" (ibid.).[184]

If Barbaras' interpretation and critique of Jonas is correct, it would be devastating for Jonas' account of life. Jonas labels his own position "integral monism" (Jonas, 1966: 19), and develops it precisely in contrast to and through critique of reductive materialism and dualism. He explicitly states that the two sides of Cartesian dualism, *res cogitans* and *res extensa*, are abstractions (ibid.: 22).[185] And a philosophy of organism "must move beyond these partial

[182] De Jesus (2015) argues along the same lines, with reference to Barbaras.
[183] The term "exteriority" is to our knowledge never used by Jonas. His words are "extended(ness)," "extension," "extensity," and simply "extended (being/substance)," and in *The Phenomenon of Life*, it is clear that all these terms are used in elaborations of Cartesian *res extensa* (Jonas, 1966: 290).
[184] Sandra B. Lubarsky criticizes Jonas in a similar manner, for occasionally falling back into "psychophysical dualism" (Lubarsky, 2010: 403).
[185] There may be a tension here, since (as mentioned in fn. 177) Jonas does not always seem to consider extended substance as an abstraction. Sometimes he seems to accept the concept of pure extended matter as necessary to account for lifeless things such as stones, e.g. when he defines life as *form* in contrast to the lifeless matter (Jonas, 1966: 80–81), and when he argues against what he

abstractions ('body' and 'soul', 'extension' and 'thought', and the like) toward the hidden ground of their unity" (ibid.: 19).[186] On this basis, Jonas seeks to establish an alternative to both materialism and idealism, which he conceives of as abstract and one-sided heirs to the unmediated and equally abstract Cartesian dualism (ibid.: 1–26). Moreover, Jonas' critique has a strong normative motivation, since he conceives of modern dualism and materialism as incurably nihilistic. This is a criticism he famously directs at Heidegger's existentialism (ibid.: 232). Accordingly, if Jonas' ontology of nature, as his critics claim, is materialistic and/or dualistic after all, he lands on an ontology he himself criticizes as abstract, nihilistic, and unable to understand life.[187]

Barbaras' interpretation of Jonas is, however, misguided at some key points.[188] First, virtually the same objection Barbaras raises against Jonas is formulated by Jonas himself, when he writes that "no mere analysis of the physical record [i.e. extended matter] will ever yield" internal identity (ibid.: 82). Moreover, Jonas' examination of metabolism, in the essay "Is God a Mathematician?", certainly starts with a mere spectator perspective ("the Divine Mathematician") that sees nature as *res extensa*. But his aim is precisely to show that this perspective leaves out something decisive and hence is abstract. Jonas asks the reader to imagine a god who created the world as mere extended being and only knew of the world as such extensity. Would such a god understand the phenomenon of life? No, this god "misses the decisive point – the point of life itself: its being self-centered individuality" (ibid.: 79). The mathematical description does not capture life as experienced or lived. We humans ("poor mortals"), however, experience this dimension of being. Hence, in Jonas' thought experiment, we know parts of the world unconceivable to this god; for example, we know of sight as an experience, not merely as an extended physicochemical process. The imagined god would be ignorant of this quality of sight, so evident to us, and such an ignorant god must be rejected: There is no "Divine Mathematician."

takes to be panpsychism in Whitehead (ibid.: 95–96). Other times he concedes that matter must, at a minimum, be endowed with a "genuine potency" of becoming alive, and he mentions "a tendency in the depth of being towards (…) freedom" (ibid.: 2, 4), which means, among other things, that matter cannot be defined properly without reference to life. In our interpretation, we put the most emphasis on these formulations, where pure extended matter is understood as an abstraction in all circumstances. This makes Jonas' account more coherent.

[186] This is a clear parallel to Merleau-Ponty's call to conceive of the body as "a third genre of being between the pure subject and the object" (2012: 366).

[187] Cf. Jonas' sharp examination of the familiarity between dualism, materialism, and idealism (Jonas, 1966: 17–19).

[188] See also 11.6.3.

Accordingly, in Jonas' view, a more comprehensive account of being and the phenomenon of life must recognize that the purely quantitative, mathematical perspective is limited and abstract. The shortcomings of the mathematical perspective provide motivation for reviving and grant validity to the more concrete bodily perspective; "life can be known only by life" (ibid.: 91) as Jonas famously puts it. It is, however, still unclear what this amounts to – does "life" know itself primarily through introspection, or through encounters with other living beings? – but at least we now know that to accept the validity of a bodily perspective entails rejecting the picture of nature as mere extended substance. The central turning point of "Is God a Mathematician?" thus shows that the approach Jonas recommends is to return to bodily experience and survey what aspects of that perspective materialism has omitted in its process of abstraction. In this way, pace Barbaras, Jonas does *not* first identify *life* "in the domain of exteriority." Rather, his conclusion is negative: Life cannot be identified in the domain of pure extension.

Accordingly, Jonas does not merely accept the concept of purely extensive metabolism at face value, as expressing what life really is. Rather, he reinterprets the concept as a descriptive generalization covering different concrete experiences of aliveness. On its own, in abstraction, metabolism does not express what life is. But it can be interpreted as a sort of "gesture" towards those bodies where life is expressed, and experienced, as concrete. This puts Jonas in the position to give what he calls "an 'existential' interpretation of biological facts" (ibid.: xxiii).[189]

To sum up, in his discussion of "the Divine Mathematician," Jonas reveals the shortcomings of the objectivist "view from nowhere" (Nagel, 1986) when it comes to grasping the reality of life, arguing instead that that achievement comes from the engaged, bodily perspective of our primordial experiences and encounters. Does that mean that we now have a fully satisfying account of how we humans are able to understand nonhuman organisms as acting purposively? We do not think so. At this point, much depends on what is to be found in concrete experiences and encounters, which is the topic of the fifth and last step of Jonas' philosophy that we will consider.

[189] Jonas claims that this *interpretation* of biological concepts is also unknowingly made by convinced materialist biologists: "Else they would altogether miss the existence of life around them and thus have no object for inquiry – the concrete *from* which to make their abstractions – to begin with" (Jonas, 1966: 91). This can be read as an explicit contradiction of Barbaras' critique that Jonas maintains "the split between interiority and exteriority (…) and that is a consequence of a resolutely materialist ontology. Life is identified first of all in the domain of exteriority" (Barbaras, 2010: 94).

11.6 Encounter and otherness

11.6.1 The element of encounter

A central yet often overlooked claim by Jonas is that *encounters* enable a specific world relation with epistemological significance. To understand what this means, it is helpful to notice a point Jonas makes early in *The Phenomenon of Life*, in his "Note on anthropomorphism." There he remarks that a Cartesian split between subjective human being and extended nature has led to the predominance of one specific world relation with an epistemological bias. He writes that in modern thinking, an "epistemological monopoly" is

> accorded to the perceptual mode of cognition, i.e., to outside knowledge mainly in the visible mode, in consequence of which "objectivity" becomes essentially the elaboration of exterior sense-data in the lines of their extensional properties. *Other possible modes of relation to reality, such as the communication between life and life*, *or the experience of the impact and resistance of things in bodily effort, fell short of the ideal of exact knowledge and ceased to count*. (Jonas, 1966: 35, our emphasis)

Here, Jonas makes a distinction between three modes of world relation, each providing a specific kind of knowledge: 1) The relation between detached subject and extended object, 2) communication between life and life, and 3) the experience of the resistance of things in bodily effort.[190] Later in the book, Jonas introduces the concept of "the element of encounter" in perception. Against the backdrop of the tripartite distinction between world relations, this concept can be understood as an elaboration of 2) and 3). Jonas here defines it as "the self-communication of the object to my receptivity and its insistence on itself even while in my perceptive hold" (1966: 168). Such encountered otherness – a foreign solidity or relative independence – is necessary for judging anything as *real* at all. To perception, "the felt affectiveness of the data […] is necessary for the experience of the 'reality' of the real" (ibid.). Hence, Jonas' claim is that realism rests on this "element of encounter."

These general claims also apply to the specific case of nonhuman organisms. Experience of the *reality* of nonhuman others (and human others, for that matter) depends on encounters with these others, in which their "insistence on themselves" as purposive, living

[190] Barbaras (2010) seems to (mis)interpret Jonas as only basing his analysis of metabolism on the first kind of world relation with its epistemological limitations. That we constantly engage in other, more basic forms of relations to the world – especially to other humans and living creatures – is also a key enactivist point. See e.g. Colombetti (2014), Fuchs and De Jaegher (2009), Gallagher (2020), and Thompson (2007, ch. 13).

beings is "affectively felt"[191] by the experiencing subject. If Jonas is to be coherent, this is the experiential basis a theory of organism requires.[192]

But Jonas' statements about the embodied perspective in "Is God a Mathematician?" are too general and undifferentiated to meet this requirement. There, he does not sufficiently explain how the embodied human is able to recognize and be affected by life and purpose in concrete *others*. Therefore, it still does not account fully for the experiential basis for the strong claims made by Jonas in his interpretation of biological concepts. As presented until now, Jonas' position may still be accused of projection and anthropomorphism – not because it is materialist, but because it is too *egocentric*. To respond properly to criticisms of anthropomorphism, it is necessary to elaborate on our embodied experience and explicitly incorporate into it *encounters with* and *relations to others*. To understand others as active and purposive, an account of how experiences with such others is an *emphatic experience* (Bernstein, 2001: 302),[193] inseparable from our understanding of ourselves and our world, is needed. Only on such a basis can an "existential" approach to life be fully appreciated. What does Jonas have to offer here?

11.6.2 The life experience in encounters

In *The Phenomenon of Life*, the best formulations Jonas offers on the experience of life in others are given on the first page of the first essay, in his description of the experiential basis for early days animism or "panvitalism": "That the world is alive is really the most natural view, and largely supported by prima-facie evidence. On the terrestrial scene, in which experience is reared and contained, life abounds and occupies the whole foreground exposed to man's immediate view" (Jonas, 1966: 7). Jonas refers to this as "the life experience" (ibid.: 15): Life is experienced as *there*, in the terrestrial world. Later, Jonas claims, this experience was suppressed by a worldview based on the opposite experience, "the death experience": Life is absent *there*, e.g. in that dead body or in that stone. In generalized and reified form, this experience leads to what Jonas names the "ontology of death" of modernity, which equals the materialism discussed above (ibid.: 9–12).

However, when Jonas later in the book argues that there are basic experiences that a fully materialist worldview cannot account for, he does not refer to "the life experience." He

[191] On our reading, this can be seen as a precursor to Thompson's view on "empathy" between living beings, in *Mind in Life* (2007: 165, 382–412).
[192] In accordance with Bernstein (2001: 301–305) argues that the experience of the difference between living and nonliving beings is *emphatic* – especially forceful and clear – through a reading of Wittgenstein.
[193] See previous note.

does not point to the fact that we experience life as *there*, in *others different from but similar to our own embodied selves*. Rather, he points to the fact that we experience life as present *here*, in me, in my body (ibid.: 79). Hence, the experiential basis drawn upon here for the interpretation of metabolism is the experience of life in *me*, not you; *here*, not *there*; in the *self*, not the *other*. There is thus a danger that ontology collapses into egology, because the "element of encounter" necessary for realism about others is absent.[194]

Admittedly, it is difficult to say precisely what Jonas' position is at this point. Notice the ambiguities in this quote:

> [I]nternal identity is implicit in the adventure of [metabolic, processual] form and is spontaneously assumed on its external, morphological evidence which alone is open to inspection. But what kind of inference is this? And by whom? How can the unprepared observer infer what no mere analysis of the physical record will ever yield? […] The observer of life must be prepared by life. In other words, organic existence with its own experience is required of himself for his being able to make that inference, which he does make all the time, and this is the advantage – perennially disowned or slandered in the history of epistemology – of our "having", that is, being, bodies. […] It is by this interpolation of an internal identity alone that the mere morphological (and as such meaningless) *fact* of metabolic continuity is comprehended as an incessant *act* (…). (Jonas, 1966: 82)

We assume that this paragraph is a source of dualistic interpretations of Jonas, claiming that his account presupposes that humans mysteriously find "inwardness" and purposiveness in mere "external, morphological evidence." In such an interpretation, the passage serves to prove that Jonas' position is at once both materialistic and "spiritualistic" (Barbaras, 2010: 121), because we simply detect, or "interpolate" from our own experience, a "spirit" in the "machine." Seen in isolation, this is a possible interpretation of the quoted paragraph. But based on the sources we have presented above, it can also be read otherwise. It can be read as saying that the recognition of other beings as acting, real wholes *is primordial in our experience, prior to the scientific view of organisms as extended matter*; and that the experience of the morphological evidence of other living beings *for us* is expressive and meaningful, something that can be understood and interpreted, and that this is more basic than the view of them as mere extended matter. This could be the meaning of Jonas' above-quoted statements that the

[194] Our use of the Levinasian term "egology" is indebted to Robert R. William's use of it in his critique of Husserl: "Husserl did not go far enough when he developed phenomenology as an egology without ontology" (Williams, 1992: 95).

recognition of "internal identity" and meaningful action in organisms is something we, humans, "spontaneously assume" and that it is an inference "we make all the time."

The clash between these two opposing interpretations is difficult to settle based on *The Phenomenon of Life* alone. What is missing there is an examination of how this "spontaneous inference" takes place in encounters with nonhuman others. Jonas could have made his position clearer by drawing on "the life experience" as well as his insights regarding encounter and realism in his interpretation of metabolism, but he does not. What is missing in *The Phenomenon of Life*, which would have made it harder to accuse him of anthropomorphism, is an explicit statement of the fact that we recognize signs of life in concrete living others, not, at first, through introspection of our own inwardness, projected on the more generalized concept of "metabolism." As we will see below, Jonas' works contain the resources for arguing that it is rather in the concrete movements, gestures, or growth of other bodies that we primarily recognize the expressions of life. In general terms, what is underdeveloped in *The Phenomenon of Life* is a philosophy of encounter and otherness. Such an examination is, in our view, necessary for Jonas' view of organisms, and its absence is a weakness that makes his account of the phenomenon of life unstable.

This instability probably explains, and perhaps even justifies, some of the skepticism towards the Jonasian influence on the enactivist field. For, rather than clarifying and sorting out this ambiguity in Jonas' account, some of the most central enactivist literature on Jonas tends to *reproduce* it. In Weber & Varela, for instance, we find the claim that "[i]t is actually by experience of *our* teleology – our wish to exist further on as a subject, not our imputation of purposes on objects – that teleology becomes a real rather than an intellectual principle" (2002: 110). And in *Mind in Life*, Thompson states that "this inwardness or interiority [and consequently, purposiveness] is disclosable to us because we ourselves are living beings who experience our own bodily selfhood firsthand" (2007: 163). We are not saying that there is *no* truth in these statements. After all, we established in the previous section that our concrete, bodily perspective is essential for the ability to grasp the purposive reality of other organisms. What is problematic is the suggestion that this grasping is the conclusion of a process that unequivocally starts with introspective evidence of life *in ourselves*; this is precisely what opens the door to accusations of anthropomorphism and projection. However, rather than this being a reason for closing the door to Jonasian influences on the enactivist project, we think that a more thorough reading of Jonas' works proves that he in fact has resources that can be of use in resolving this ambiguity, which to some degree still haunts enactivism.

11.6.3 Recognition of life in others, prior to introspection

In "Change and Permanence," originally published in 1969, Jonas makes it clear that he does not regard "inwardness" as something human subjects have unmediated introspective access to. On the contrary, he stresses the irreducible intersubjectivity of human self-knowledge:

> Neither the knowledge of other minds, nor even the knowledge of mind as such, originates from the inspection of our own. On the contrary, already the knowledge of our own mind, even our having one in the first place, is a function of acquaintance with other minds. Knowledge of inwardness as such, whether one's own or that of others, is based on communication with a whole human environment which determines, certainly codetermines decisively, even what will be found in eventual introspection. […] An understanding of the inwardness of others, in advance of and beyond what "introspection" could have found in one's own inwardness, is a precondition for the very emergence of such an inwardness. (Jonas, 2010: 246–247)

It is hard to imagine a clearer statement on the *mediatedness* of human "inwardness."[195] In the above paragraph, Jonas strongly opposes a view of human inwardness as something directly accessible. His view seems to be consistent with Hegelian recognition theory on this point: Having a mind – or a "self" as recognition theorists usually say (there may be a difference here) – is a dialectical achievement. It is acquired only through some sort of relation or confrontation with otherness. To develop a *human* mind, this "otherness" must also be encountered in distinctly human others, capable of recognizing the human self as human. Only through being recognized as a human self by other human selves (which one must recognize in return) does one achieve a human self.[196]

If this is Jonas' view on the human self, it is worth noting. Barbaras (2010) and others criticizing Jonas for a "theory of projection" seem to interpret him in exactly the opposite way, as claiming that human "inwardness" is accessed directly through introspection and then projected onto others. But here Jonas is evidently arguing the opposite, namely that relations to and recognition of others are necessary preconditions for all introspection. He is crystal clear in his rejection of a theory of projection, stating that we have knowledge of other minds "*not* by analogical inference, overt or covert, from myself to others; not by transference and projection, as the post-Cartesian doctrine of consciousness made it almost de rigueur to hold" (Jonas, 2010: 246).

---

[195] That our human form of inwardness, as well as our access to and knowledge of our own inwardness as such, is enabled and mediated by intersubjective practices is a claim frequently advocated in enactivist literature. See e.g. Thompson (2007), De Jaegher and Froese (2009), and Gallagher (2020).

[196] See e.g. Honneth (1992), Williams (1997), and Pippin (2008).

At this point, it is fair to voice the following objection: Have we not fallen back into anthropocentrism? That is, are not the "others" in question here only *human* others, meaning that the inwardness of nonhuman organisms could still be conceived as the result of a human projection? In fact, in the same essay, Jonas continues to elaborate on the question of knowledge of other minds in an explicitly non-anthropocentric way. He claims that animals also seem to recognize *life* in others: "The recognition of other life is a fundamental feature of the outside relation integral to the animal organism. Among the objects of perception, neutrally classed as 'things,' living things *as living* are paramount" (ibid.: 248). This recognition of life by life goes across species: "A creature recognizes greed or aggression when it meets it in a fellow creature's eyes (or in posture, sound and smell), and this far beyond its own kind" (ibid.). How could it be that life is recognized in others? Jonas answers: "*Animal life is expressive*, even eager for expression. It displays itself; it has its sign codes, its language; it communicates itself" (ibid.: orig. emphasis). Recall that Jonas considered the "self-communication" of the object in concrete encounters to be a criterion for realism. Hence, Jonas here gives the statement missing in *The Phenomenon of Life*: Nonhuman animals self-communicate – insist on themselves *as living* – and are expressive.

Notice that Jonas' formulations here are limited to *animal* life. Hence, we do not yet have a Jonasian defense of the deep mind-life continuity thesis, which ascribes a form of inwardness to *all* forms of life. Is this something he can provide?

6.4 Encounter in Organism and Freedom

More than a decade before the publication of *The Phenomenon of Life*, Jonas had already formulated a more systematic and worked-through monograph, titled *Organism and Freedom*. Following rejections from a couple of publishers, he reworked and published parts of the book as the essays in *The Phenomenon of Life*, until recently known as the most fully articulated formulation of his philosophy of biology. In 2016, *Organism and Freedom* was published as a part of the collected works of Hans Jonas. In this original manuscript, Jonas mentions exactly what we miss in the more fragmented *The Phenomenon of Life*, namely, concrete encounters with nonhuman others. Consider the following passage, which clearly illuminates the *expressive* nature of life:

> When in doubt whether the victim of an accident is alive or dead, we look to see whether or not he breathes, whether or not his heart beats, and the like. When in doubt whether a lizard by the roadside is alive or dead, we may tickle it with a grass-stalk and see whether it responds, i.e.,

> moves. To ascertain whether a sapling we have planted has kept alive, we observe it over a number of days and see whether it grows. (Jonas, 2016: 2, ch. II)

These few sentences alone give more information about concrete encounters with living others – both human and nonhuman – than the whole of *The Phenomenon of Life*. Importantly, Jonas here includes non-animal organisms, represented by the sapling. In this passage, the human "we" recognizes life in certain *movements*, such as breath, pulse, growth, or locomotion. And these movements are not merely perceived as mechanical; rather, they appear as expressions of actions: "We expect of living things that they *do* something" (ibid.: orig. emphasis). Either in their aliveness or in their lifelessness, the victim, the lizard, and the sapling satisfy Jonas' criteria for "the element of encounter" (Jonas, 1966: 168); they "insist on themselves," they "self-communicate" to our receptivity, hence they are *real*, either as *living* or as *dead*.[197] Organic beings' "insistence on [themselves] even while in my perceptive hold" (ibid.) could perhaps take the form of the gaze of a wild bird or an elk, or the stubborn resistance of a cockroach, or the twitch of a cod on the hook.

However, what is the difference between this "insistence" and the "insistence" of lifeless things "in my perceptive hold"? Is not the desk in front of me also quite insistent? That is, I could close my eyes, try to think it away, then open them, and it will be there, nevertheless. It is not clear what Jonas would answer, but as we understand him, it seems reasonable to claim, on his behalf, that only life insists on *itself*, in the sense that self-concern is expressed by its behavior. It is of course possible for us to err in distinguishing life from nonlife. Just because something immediately *appears* as if it were insisting on itself, this does not mean that it actually *is* self-insisting – this is usually quite easily discovered by further scrutiny of the entity in question, as Jonas demonstrates in the paragraph quoted above.[198]

To elaborate on what we see in living others, we could say in general terms that it is *likeness*. According to Jonas' own position on human perception and "image-making," to perceive likeness means to see neither identity nor non-identity, or rather to see both aspects at

[197] We see an affinity here with the enactive concept of empathy, understood as a kind of embodied recognition of others as alive and mindful. See e.g. Thompson (2007: ch. 13), Colombetti (2014), and Gallagher (2020).

[198] However, that does not mean that Jonas avoids the possibility of error, or skepticism, but in our view this is not devastating to his position. In our reading, Jonas places great emphasis on concrete encounters with others as a precondition for the recognition of life. Such a view does not pretend to do away with all skepticism, or avoid any possibility of error. Neither does it pretend to reach total unambiguity. Because the (encounter with) *other* is considered as an inevitable source for the knowledge in question (knowledge of other minds), the epistemic subject must refrain from complete epistemic control or security.

once (Jonas, 1966: 158–167). The sapling grows *like* I did as a child, but it is also very different from me. The lizard moves away, so can I, and in that respect the lizard is more like me than the sapling, but we are still very different. The victim of the accident may speak to me, and hence there is another level of similarity, but still we are different. His body is not mine; I do not experience his pains the way he does; his whole life history is different from mine, etc.

In *Organism and Freedom*, Jonas describes these concrete encounters *before* the concept of metabolism as externality is introduced. This fact challenges critics of Jonas (e.g. Barbaras) who accuse him of beginning with a "mere exteriority" view of organisms and then superimposing life on this extended form. Rather, Jonas begins his more systematic examination in *Organism and Freedom* with the experience of life being already there in living others, not in need of being animated by a human projection. That fact fits our interpretation of his view, which says that the experience of other organisms as *living* and *acting* is primary to the view of them as extended matter.[199]

At this point, Jonas' argument for how we are justified in conceiving of the purposive activity of other living beings can be reconstructed as follows: Because we humans, at a basic bodily level, recognize either life or nonlife in other beings, we are in a position to be able to let this "life experience" – experience of life in others in encounters – inform our understanding of the scientific concept of *metabolism*.[200] Metabolism becomes, in Jonas' philosophy, the abstract minimal requirement for bodily similarity in otherness that delimits and gestures

[199] It must be noted that Jonas some pages later interprets the lizard encounter in a way that is problematic for our interpretation: "We observe the lizard's motions upon our touching of it, but not its sensing the touch or its consequent excitement. Sensing and excitement we witness in ourselves 'from within', and this is how we know about them, while other living beings we witness only in their externalization on motions or other changes of the body" (Jonas, 2016: 5, ch. 2). These formulations show that the critique of Jonas as relying too much on a dualist distinction between the "internal" and the "external" does have textual support. As Lubarsky (2010) correctly observes, Jonas occasionally falls back into psychophysical dualism. We do not deny that Jonas' position is ambiguous at this point, but as interpreters of Jonas we think one gets to the point where one must choose what to put the most emphasis on: certain dualistic formulations or the resources Jonas offers to overcome dualism.

[200] In *Organism and Freedom*, Jonas claims that active movement is not the only evidence of life that springs forth from concrete encounters with others. He writes that we cannot "commit ourselves to an enquiry on terms of activity [i.e. metabolism] alone" (Jonas, 2016: 3, ch. II). Equally important is that we observe and expect that living beings display *reactions* ("responsive behavior"). This is most evident in the example with the lizard, which is recognized as living when it responds (by moving) to being tickled. Jonas writes in *Organism and Freedom* that the mere process of metabolism "cannot even be meaningfully described" without an account of some "sensitivity" or "irritability," which are rudimentary forms of "sentience" and "perception." Accordingly, it would be most accurate to add "irritability" in the formulations in this paragraph, but we limit ourselves to "metabolism" for the sake of space.

towards those "others" who are able to recognize purposively acting others in concrete encounters.

11.7 Identity-thinking: The danger of reducing the other to the self

Even though this correction shows that Jonas' texts contain resources for rejecting the most devastating points in the critiques of "the Jonasian turn," we still find Jonas' interpretation of metabolism partly dissatisfactory. Our reason is the following: Jonas' account of nonhuman organisms does not seem to live up to his insights on "likeness," mentioned above, because he tends to grant living creatures purposive action and subjectivity only to the degree that they are *identical* to the human body or self.

This claim may seem unfair, since Jonas does give an account of differences between sorts of organisms. In *The Phenomenon of Life*, he pictures a hierarchy of different degrees of "needful freedom" exercised by living beings.[201] The freedom entails a relative detachment and independence of particular matter (Jonas, 1966: 80–81). All metabolic structures have some freedom, according to Jonas, due to the way in which they maintain their identity through material exchange and renewal. In his view, freedom is a function of *mediation* between the living form and particular matter. Metabolism itself is a basic form of mediation (ibid.: 183). Further, Jonas differentiates between plants and animals, the latter having emotions and the abilities of locomotion and perception (ibid.: ch. 4), and between animals and humans, the latter being able to abstract and make images and symbols (ibid.: ch. 7). Jonas interprets these different abilities as signs of different degrees of dialectical mediations between an organism and its surroundings and the specific matter it is made of at a particular point in time. Greater distance and complexity of mediation in turn equal greater freedom, although all freedom remains "needful" in the sense that it must be exercised by a living form that has to be realized in *some* matter.

However, although Jonas' concept of dialectical, needful freedom is thought-provoking and deserves more attention, it does not really account for nonhuman difference. All the

[201] For an enactivist use of Jonas' notion of needful freedom, see Di Paolo (2009: 16 ff.). It is drawn on here, together with Jonas' idea of "transitions" between different forms of life, to give an enactive account of the differences in organizational identity between kinds of organisms (e.g. how animals are distinguished from other life forms) as well as of how autopoiesis underlies but does not fully determine every organism's form of life.

mediating traits Jonas mentions – metabolism, emotions, locomotion, image-making etc. – are exercised by humans. Moreover, they are analyzed by Jonas as most completely represented in human beings, and only to lesser degrees in nonhuman others. Hence, no mediation or freedom can be genuinely different from human freedom, only the *same* to a lesser extent. This lack of appreciation of nonhuman difference is probably clearest in the following statement by Jonas:

> Perhaps, rightly understood, man *is* after all the measure of all things – not indeed through the legislation of his reason but through the exemplar of his psychophysical totality which represents the maximum of concrete ontological completeness known to us: a completeness *from which*, reductively, the species of being may have to be determined by way of progressive ontological subtraction down to the minimum of bare elementary matter (…). (1966: 23–24)

Here Jonas claims that nonhuman organisms and nature in general are known to us not in their rich difference, but as human beings minus something. Crudely put, Jonas seems to claim that if you begin with a human being and subtract some complexity, you have an animal. Subtract some more and you have a plant. Subtract even more and you have "bare elementary matter."

This account leaves out the possibility of genuine difference, not to mention the possibility that nonhuman freedom may exceed human freedom in any way. This is not satisfying, because one can easily think of organisms with abilities that (probably) give them experiences and freedom that are unavailable to humans. Think of the eagle flying with its own wings. It exercises a freedom that humans can only get a vague idea of through complicated technological aids (i.e. airplanes and hang-gliders). In Jonas' account, such a freedom seems to be subsumed under the great label of "locomotion," and hence reduced to something equal to human walking and running. But it is not – it is different.

We cannot see that Jonas appreciates such differences. Hence, Jonas' recognition of nonhuman life may be accused of what Theodor W. Adorno calls "identity-thinking" (2003 [1966]), which seeks to gain knowledge about something by identifying it with something already known. Identity-thinking subsumes "individuality (sensuous particularity) under a coherent, unifying, simplifying, explanatory universal (myth, god, natural law, unified science)" (Bernstein, 2001: 30).

In Jonas' case, as mentioned above (11.4), nonhuman others are known as "others" or individuals only when we, humans, identify degrees of ourselves in them. What justifies this claim? Let's look at Jonas' interpretation of the theory of evolution in more detail: "If man was the relative of animals, then animals were the relatives of man and *in degrees bearers of that*

inwardness of which man, the most advanced of their kin, is conscious of in himself" (Jonas, 1966: 57, our emphasis). Here Jonas claims that animals, and maybe plants, are bearers of a degree of "that inwardness" that man is conscious of in himself. And the "dignity" of nature rests on that *identification* of self-sameness (or human-sameness) in nonhuman others. This account can be criticized for what environmental ethicists call "moral extentionalism" or "generalized egoism" (Callicott, 1989: 84–85). The two labels single out a typical procedure of modern ethical thinking: Moral consideration (and in Jonas' case *being*, in the specific sense of being *alive*, with all that follows) is extended to nonhuman others in proportion to their identity with humans.

A problem with such an account of knowledge of others is the danger of reducing the other to the self, of dissolving difference in unity – or, in Adorno's words, the danger of losing sight of "non-identity."[202] Thus, Jonas seems to be guilty of a "denial of difference," similar to what other prominent environmental philosophers, such as Arne Næss, Tom Regan, and Paul Taylor, have also been criticized for (Plumwood, 1993: 165–189).

What Jonas does not do, in the quoted paragraphs, is to let experiences of *likeness*, the intertwining of identity and non-identity, be the basis for the recognition of nonhuman others. He relies too heavily on identity. Thus, he misses the opportunity to appreciate that the significant being of the other is not wholly transparent to the self, and that the self does not have the sole power to predict, influence, or transform the other, but that the other can also exceed, influence, or transform the self in unexpected ways.[203] In short, a more detailed analysis of the specific, concrete, *living*, mediating *other* as it is perceived in encounters is missing in Jonas' account.[204]

[202] In this context, this is a problem for the justification of Jonas' view on the purposiveness of individual nonhuman organisms. Further, it leads to a lacking description of organic being in general, because *relations* between differentiated organisms are left out. Jonas does not mention reproductive (sexual) relations, symbiotic relations, nor relations between parent and offspring (Kass, 1995: 458; Hösle, 2001; Pommier, 2017).

[203] Such a view on encounters with nonhuman others is presented by Freya Mathews (Mathews, 2003: 78).

[204] Every time the word "otherness" is mentioned in *The Phenomenon of Life*, it refers to the otherness of the *world in general*, in dialectical opposition to the organism. This is an important point in itself, but this concept of otherness is not sufficiently differentiated. It does not account for the *specific* otherness of *living others*, of organisms.

11.8 Conclusion

We have purported to provide a critical overview of Jonas' case for natural purpose through a reconstruction of five arguments from his works. Drawing on sources beyond the most-cited passages from *The Phenomenon of Life*, we have shown how Jonas' philosophy contains resources both for responding to his critics and for illuminating lesser-known aspects of a problem that is very much alive in the enactivist context. Through our investigation of Jonas' ideas, we have shown how the reality of natural purpose can be motivated from a variety of perspectives: First, how the discovery that the anti-teleological core of much natural science is primarily methodological allows for the *possibility* of purpose in nature; second, how the performative self-contradiction involved in rejecting the reality of purpose is evidence of the reality of teleology at least in the case of humans; third, how the fact of evolution makes human exceptionalism *prima facie* implausible; and last, how Jonas makes the positive case for immanent teleology in nonhuman organisms through his existential interpretation of metabolism and how he anchors the "evidence" of nonhuman purposiveness in *concrete encounters* with living organisms.

Although there is plenty of room for further discussion about the arguments Jonas proposes, and although enactivism has moved beyond Jonas in several respects, we hope to have shown that he still provides insights that are relevant to enactivism. However, we do not claim that Jonas' position is without difficulties. Thus, our final point was that Jonas' account is guilty of a "denial of difference" in nonhuman others, granting them purposiveness only to the extent that human traits can be identified in them. By drawing attention to these challenges faced by Jonas, we hope to have illuminated some possible pitfalls for the enactive account of normativity in nature. We also hope to have shown, pace the critics of the "Jonasian turn," a more nuanced version of Jonas' position. We would even dare to suggest that Jonas' writings on concrete encounters as a non-anthropomorphic ground for ascribing teleology to nonhuman organisms should be further explored by enactivism as a resource for defending against those skeptical of its normative turn.

Bibliography

Adorno, T. W. (2003) [1966]. *Negative Dialektik, Jargon der Eigentlichkeit.* Suhrkamp.

Abramova, K. & Villalobos, M. (2015). The apparent (ur-)intentionality of living beings and the game of content, *Philosophia,* 43: 651–668.

Barandiaran, X. (2016). Autonomy and enactivism: Towards a theory of sensorimotor autonomous agency, *Topoi,* 36: 409–430.

Barbaras, R. (2010). Life and exteriority: The problem of metabolism. In J. Stewart, O. Gapenne, & E. A. Di Paolo (Eds.), *Enaction: Toward a new paradigm for cognitive science* (pp. 89-122). The MIT Press.

Barrett, N. F. (2017). The normative turn in enactive theory: An examination of its roots and implications, *Topoi*, 36: 431–443.

Bernstein, J. M. (2001). *Adorno: Disenchantment and ethics*. Cambridge University Press.

Callicott, J. B. (1989). *In defense of the land ethic: Essays in environmental philosophy*. State University of New York Press.

Colombetti, G. (2014). *The feeling body: Affective science meets the enactive mind*. The MIT Press.

De Jaegher, H. & Froese, T. (2009). On the role of social interaction in individual agency, *Adaptive Behavior*, 17(5): 444–460.

De Jesus: (2015). Autopoietic enactivism, phenomenology and the deep continuity between life and mind, *Phenomenology and Cognitive Sciences*, 15: 265–289.

Di Paolo, E. (2005). Autopoiesis, adaptivity, teleology, agency, *Phenomenology and the Cognitive Sciences,* 4: 429–452.

———. (2009). Extended life, *Topoi,* 28: 9–21.

Di Paolo, E., Buhrmann, T., & Barandiaran, X. (2017). *Sensorimotor life: An enactive proposal.* Oxford University Press.

Evernden, N. (1993). *The natural alien*. University of Toronto Press.

Froese, T. (2017). Life is precious because it is precarious: Individuality, mortality, and the problem of meaning. In G. Dodig-Crnkovic & R. Giovagnoli (Eds.), *Representation and reality in humans, other living organisms and intelligent machines* (pp. 33-50). Springer International Publishing.

Fuchs, T. & De Jaegher, H. (2009). Enactive intersubjectivity: Participatory sense-making and mutual incorporation, *Phenomenology and the Cognitive Sciences*, 8(4): 465–486.

Gallagher, S. (2020). *Action and interaction*. Oxford University Press.

Griffin, D. R. (1998). *Unsnarling the world-knot: Consciousness, freedom, and the mind-body problem*. Wipf & Stock.

Honneth, A. (1992). *Kampf um anerkennung: Zur moralischen grammatik sozialer konflikte.* Suhrkamp.

Hösle, V. (2001). Ontology and ethics in Hans Jonas, *Graduate Faculty Philosophy Journal*, 23: 31–50.

Hutto, D. D. & Myin, E. (2013). *Radicalizing enactivism: Basic minds without content*. The MIT Press.

Hverven, S. (2020). Encounter and otherness: A critical reading of Hans Jonas' Interpretation of Metabolism. In O. Lysaker (Ed.), *Between Closeness and evil: A Festschrift for Arne Johan Vetlesen* (pp. 89-124). Scandinavian Academic Press.

Jonas, H. (1966). *The phenomenon of life: Towards a philosophical biology*. Northwestern University Press.

———. (2010). Change and permanence: On the possibility of understanding history. In *Philosophical essays: From ancient creed to technological man* (pp. 237- 260). Atropos Press.

———. (1984). *The imperative of responsibility: In search of an ethic for the technological age*. The University of Chicago Press.

———. (2016). *Organism and freedom. An essay in philosophical biology. Online-appendix zu Band i, 1 der Kritischen Ausgabe der Werke von Hans Jonas.* Jens Ole Beckers und Florian Preußger.

Juarrero, A. (1999). *Dynamics in action: Intentional behavior as a complex system*. The MIT Press.

Kant, I. (2006) [1790]. *Kritik der Urteilskraft*. Felix Meiner Verlag.

Kass, L. (1995). Appreciating the phenomenon of life, *The Hastings Center Report*, 25: 3–12.

Kee, H. (2018). Phenomenology and naturalism in autopoietic and radical enactivism: Exploring sense-making and continuity from the top down, *Synthese*, 1–21. https://doi.org/10.1007/s11229-018-1851-3

Köhler, W. (1966) [1938]. *The place of value in a world of facts*. Liveright.

Lubarsky, S. B. (2010). Jonas, Whitehead, and the problem of power. In H. Tirosh-Samuelson & C. Wiese (Eds.), *The legacy of Hans Jonas: Judaism and the phenomenon of life*. Brill. 397–418-

Mathews, F. (2003). *For the love of matter: A contemporary panpsychism*. State University of New York Press.

Maturana, H. R. & Varela, F. (1980). *Autopoiesis and cognition: The realization of the living.* D. Reidel Publishing Company.

Merleau-Ponty, M. (1963) [1942]. *The structure of behavior*. Translated by Alden L. Fisher. Duquesne University Press.

Nagel, T. (1986). *The view from nowhere*. Oxford University Press.

Pippin, R. B. (2008). *Hegel's practical philosophy: Rational agency as ethical life*. Cambridge University Press.

Plumwood, V. (1993). *Feminism and the mastery of nature*. Routledge.

Pommier, E. (2017). Hans Jonas's philosophical biology: Metaphysics or phenomenology?, *International Philosophical Quarterly*, 57: 453–469.

Thompson, E. (2007). *Mind in life: Biology, phenomenology, and the sciences of the mind*. The Belknap Press of Harvard University Press.

Thompson, E. (2018, January). *Review of* Evolving enactivism: Basic minds meet content. *Notre Dame Philosophical Reviews*. Retrieved February 11, 2020, from https://ndpr.nd.edu/news/evolving-enactivism-basic-minds-meet-content/

Varela, F. J., Thompson, E., & Rosch, E. (1991). *The embodied mind; Cognitive science and human experience.* MIT Press.

Varela, F. J. & Weber, A. (2002). Life after Kant: Natural purposes and the autopoietic foundations of biological individuality, *Phenomenology and the Cognitive Sciences*, 1: 97–125.

Villalobos, M. & Ward, D. (2016). Lived experience and cognitive science: Reappraising enactivism's Jonasian turn, *Constructivist Foundations*, 11: 204–233.

Villalobos, M. & Palacios, S. (2019). Autopoietic theory, enactivism, and their incommensurable marks of the cognitive, *Synthese*. https://doi.org/10.1007/s11229-019-02376-6

Ward, D., Silverman, D., & Villalobos, M. (2017). Introduction: The varieties of enactivism, *Topoi*, 36: 365–375.

Whitehead, A. N. (1925). *Science and the modern world*. The Free Press.

———. (1978). *Process and reality: Corrected edition*. The Free Press.

Williams, R. R. (1992). *Recognition: Fichte and Hegel on the Other*. State University of New York Press.

———. (1997). *Hegel's ethics of recognition*. University of California Press.

Yolton, J. W. (1967). Review of 'The phenomenon of life: Towards a philosophical biology' (by Hans Jonas), *Journal of Philosophy*, 68: 254–258.

12
Phenomenology in enactivism's concept of nature
Anti-objectivism, naturalism, and mutual enlightenment (A4)

A characteristic feature of the enactive approach is its rejection of objectivist views of nature in favor of one informed by phenomenological philosophy. Framed by the debate that followed Shaun Gallagher's (2018a) case for the enactive-phenomenological rethinking of nature, this article asks, what is the nature of and justification for phenomenology's involvement in this picture? This question is approached through five steps. First, by showing how the body as an integration of lived and living aspects is the paradigm for the enactivist concept of nature. Second, by situating enactivism as a philosophy of nature. Third, by outlining the arguments from the transcendental status and relational nature of experience as two phenomenological reasons for rejecting objectivism. Fourth, by arguing that anti-objectivism does not undermine the objectivity of science and that letting phenomenology inform one's concept of nature is compatible with naturalism. Lastly, I make the point that the domains of phenomenology and science are not distinct but integrated, and that the enactive-phenomenological concept of nature thus should be understood as emerging from a dialectical circulation of perspectives upon and from within the same domain of experientially manifest, meaning-constitutive structures.

12.1 Introduction

What, exactly, is phenomenology's role in the enactive concept of nature, and how is this role justified?

The enactive approach to cognitive science was launched with the publication of *The Embodied Mind* (Varela *et al.*, 1991), and has been further developed and refined in numerous works in the years since.[205] At its core, enactivism is a project aiming at a naturalistic theory of the mind that encompasses and incorporates insights from a wide range of disciplines, including biology, psychology, neuroscience, the science of dynamical systems, and philosophy. It is defined, to a large part, by its rejection of internalist, representationalist, and functionalist accounts of cognition, in favor of a view of cognition as *enaction* – a dynamic, embodied, and interactional process of "mutual shaping" (Di Paolo, 2018: 88) of agents and their meaningful environments. The mind, on this view, does not reside inside our heads, representing the extra-cranial world to itself, but emerges as a holistic, self-organizing structure that encompasses brain, body, and environment.

[205] E.g., Thompson (2007), Stewart et al. (2010), Di Paolo et al. (2017), Gallagher (2017) and Di Paolo et al. (2018).

At the heart of enactive theory, we find a proposal for a quite peculiar *concept of nature*, claimed by its advocates to mark a transformation (Thompson, 2007: 359) or rethinking (Gallagher, 2018a) of what they see as the classical – i.e., reductionist and objectivist – scientific view of nature. A central feature of the enactive concept of nature is the significance it grants to phenomenology, which here refers to the style of thinking developed in the phenomenological tradition of philosophy, especially as represented in the works of Maurice Merleau-Ponty (1963; 2012). As enactivists see it, the phenomenological perspective discloses irreducible structures of life and mind, the explication of which should be seen as having a bearing on our scientific concept of nature, making it, in effect, a *phenomenological* concept of nature.

Issues regarding the relationship between phenomenology and science have been extensively treated over the last 30 years and are still widely discussed.[206] My project here is framed by some of the naturalist worries raised in response to Gallagher's (2018a) recent case for the enactive-phenomenological rethinking of nature. Questioning the legitimacy of giving phenomenology authority over the concept of nature, these critics reveal a need for a closer investigation of the issue.

I begin by providing some more details about the enactivist framework, focusing especially on how enactivism's idea of the body as an integration of lived and living aspects is a paradigm for the enactive-phenomenological concept of nature (12.2). I then situate the issue at stake within the domain of inquiry that Peter Godfrey-Smith (2001) calls "philosophy of nature" (12.3). In 12.4, I outline two phenomenological arguments that motivate enactivism's rejection of the objectivist view of nature: namely, *the argument from the transcendental status of experience* and *the argument from the relational nature of experience*. In the last two sections, I address objections to Gallagher's article made by Jakob Hohwy (2018), Carl Sachs (2018), and Maria J.C. Vázquez and Michael Wheeler (2018). First, I dismiss the latter's worry that rejecting objectivism (the view that nature can ultimately be described in subject-excluding terms) threatens to undermine the objectivity of science and show how their proposed alternatives to the enactive-phenomenological rethinking of nature (*minimal naturalism* and a *practice-centered view* of the phenomenology-science relation) are both compatible with the enactive view (12.5). Lastly, I discuss Hohwy's and Sachs' claims concerning the sufficiency

[206] Notable early contributions include Varela (1996), Gallagher (1997), Petitot et al. (eds., 1999), Braddock (2001), Gallagher (2003), Zahavi (2004), Noë (2007), and Schmicking and Gallagher (eds., 2010). For more recent discussions, see e.g. Ramstead (2015), Reynolds and Sebold (eds., 2016), Reynolds (2017), and the 2018 issue of *Australasian Philosophical Review* that includes the articles by Gallagher and his critics that I'm discussing here.

of objectivist/non-phenomenological approaches for accounting for mental phenomena and the illegitimacy of phenomenology's authority in the enactive framework (12.6). Arguing that these claims rest on the misguided assumption that there is a strict separation between the domains of phenomenology and science, I make the case that phenomenology's role in the enactivist concept of nature is not that of a detached philosophy forcing its ontology upon science 'from above.' Rather, I claim, phenomenological and scientific perspectives are *integrated* and directed at the same domain of experientially manifest, meaning-constitutive structures, and the enactivist concept of nature is motivated by and emerges from the hermeneutic practice that is set in motion by taking this integration seriously.

12.2 The body as paradigm for the concept of nature

The paradigm for the enactive concept of nature is the body, understood as an integration of both *lived* (subjective, phenomenal) and *living* (biological, material) aspects. This notion of the body is grounded on an interweaving of ideas originating in different philosophical and scientific perspectives. One key contribution comes from phenomenological philosophy. This is the idea of subjectivity, or consciousness, as essentially embodied and world-involving. As conscious subjects, the idea goes, we are *lived bodies,* defined by the vulnerabilities and capacities of our *living* bodily being, inescapably directed towards and engaged in the surrounding world, which manifest for us as a domain significant for our bodily projects (Merleau-Ponty, 2012). Another crucial contribution comes from theoretical biology, supported by the science of dynamical systems. This is the idea of living organisms as self-individuating, emergent systems. The key term here is *adaptive autonomy* (Di Paolo and Thompson, 2014; Di Paolo, 2018). A significantly modified and expanded heir to Humberto Maturana and Francisco Varela's (1980) definition of life in terms of *autopoiesis*, 'adaptive autonomy' refers to a form of organization that is displayed in its most basic form in the organic and metabolic self-generation of living bodies, but which can also be instantiated in domains over and above the 'merely' organic, such as the sensorimotor (Di Paolo et al., 2017) and the linguistic (Di Paolo et al., 2018). An adaptive autonomous system, on this view, is a system constituted by a precarious network of mutually enabling processes (operational closure) that upholds itself as an individual through exchanges and interactions with its surroundings, and which has the capacity to register and respond to tendencies pertaining to its viability as

individual (adaptivity).[207] According to the enactive view, adaptive autonomous systems thus conceived are *agents* characterized by the realization of *immanent purposiveness* and an environment that manifests as significant *from the system's own perspective* (Weber and Varela, 2002; Di Paolo, 2005). In short, adaptive autonomous systems are systems that have their own identity as *telos*, and *for which* this *telos* manifests as a value-laden, existentially relevant environment in which they can operate as agents.

For enactivists, this idea of embodiment represents a reframing of the infamous 'explanatory gap', which is here, in Evan Thompson's words, "no longer between two radically different ontologies ('mental' and 'physical') but between two types within one typology of embodiment" (Thompson, 2007: 244). The underlying idea here is both ontological and methodological. It is ontological in the sense that it posits emergent systems characterized by purposiveness and embodied subjectivity as part of natural reality, and methodological in the sense that it prescribes both phenomenological and biological perspectives as required for adequately illuminating the nature of such systems. A crucial idea in this context is that of *mind-life continuity*, which Ezequiel Di Paolo describes as the "core methodological, epistemological, and ontological attitude" of the enactive approach (2018: 75). In his words, the enactive thesis of mind-life continuity states that "mental phenomena constitutively demand explanations of individuality, agency, and subjectivity, and the principles and conceptual categories for these explanations are the same as those required by attempts to explain the phenomenon of life" (ibid.: 74).[208] Thus, adaptive autonomy – a generalization of the pattern of organic self-individuation displayed by all *life* – is argued to be the organizational form by which *minds* emerge. And, in turn, phenomenological accounts of lived experience are employed to illuminate the nature and structures of minds, which within this framework means to illuminate an intrinsic aspect of living organisms' adaptive autonomous form of existence.

We are now better positioned to understand how enactivism challenges the classical concept of nature. Put briefly, whereas the classical view (arguably) is reductionistic, the enactive concept of nature is *non-reductionistic*. That is, on the enactive view, the embodied mode of existence characteristic of minded and living beings is neither epistemologically nor ontologically reducible to 'lower' or more basic levels of description such as that of physics or neurobiology. Adaptive autonomous systems must, in short, be understood on their own terms

[207] Precariousness, operational closure, and adaptivity all have more technical definitions in the enactive literature, which are crucial for understanding the full nature of the enactive proposal but which it would lead us too far astray to go further into here. See Di Paolo and Thompson (2014) for an illuminating presentation.
[208] See also Thompson (2007: 128-129).

(epistemological non-reductionism), as self-organizing systems defined as such by their involvement in a (for them) value-laden environment. Moreover, they cannot be identified with their components as discerned at 'lower' levels of description (ontological non-reductionism). In other words, they are not '*really nothing but*' an impotent, epiphenomenal outcome of the workings of their parts, but rather natural phenomena in their own right, characterized by what Thompson calls "dynamic co-emergence," where "part and whole co-emerge and mutually specify each other" (2007: 65). This sort of emergentist view, which posits the existence of what is sometimes called 'downward causation', but which Thompson – for good reasons[209] – prefers to call "global-to-local influence" (ibid.: 424), is not entirely uncontroversial. For our purposes, however, it suffices to note that enactivists find such a degree of scientific support for their view on emergence that it at the very least seems safe to say that it is *consistent* with the current state of scientific knowledge.[210]

While positing the reality of emergence by itself amounts to a rejection of reductionism, the most radical break from the classical view of nature arguably comes from the status phenomenology is ascribed in the enactivist picture. The enactive concept of nature's non-reductionism does not only entail that living organisms, as holistic physical systems, cannot be reduced to their parts. It also entails the irreducibility of *subjectivity*, understood as an essential dimension of living beings' emergent form of existence. Thus, Thompson claims that "[l]ife is not physical in the standard materialist sense of purely external structure and function. Life realizes a kind of interiority, the interiority of selfhood and sense-making" (2007: 238). This interiority cannot be reduced to "standard materialist" accounts but requires a phenomenological elucidation. "[P]henomenology," Thompson says, "offers a way of seeing the inner life of biological systems" (ibid.: 358). And, as he goes on to say, it is *this* acknowledgment that marks the enactive concept of nature's definite break with classical

[209] Where 'downward causation' can give the idea of a topology of separate levels where 'higher' (emergent) levels have a causal impact on 'lower'(non-emergent, basic) levels, 'global-to-local influence' fits better with the idea that what is emergent is the whole system, *including its parts*, and hence that the relation in question is not that of one level of reality effectuating changes in another, parallel level, but rather that of parts of a system being influenced *as parts* of a system that behaves as a unified whole. In Thompson's words, "the two levels do not move in parallel, with one acting upward and the other acting downward, because the whole system moves at once" (ibid.: 426).

[210] Thompson (2007: 417-441) gives a detailed overview of the central aspects of and scientific support for emergence as conceived by enactivism. He also provides a convincing rebuttal of Jaegwon Kim's (e.g., 1999) famous objections to the ideas of emergence and downward causation. Enactivist also claim that their views on emergence and circular causality are supported by neurodynamic studies of epilepsy (Thompson and Varela, 2001; Le Van Quyen and Petitmengin, 2002; Thompson, 2007: 62-4). For more on the science of complex and dynamic systems, see e.g. Kelso (1995) and Juarrero (1999).

views: “in bringing the resources of phenomenology to bear on our understanding of nature, the very idea of nature is transformed” (ibid.: 359). In this way, the transformation in question does not only involve a rejection of reductionism *per se*, but a rejection of the *objectivist* form of reductionism according to which everything is ultimately reducible to objective – in the sense of subject-free and meaningless – nature.

To be clear, the idea here is not that subjectivity (the ‘interiority’ of life) is entirely beyond explanation in objective scientific terms. On the contrary, such explanations are precisely what the idea of adaptive autonomy is supposed to enable, providing a model of mind and life that lends itself to mathematical articulation and can serve as a framework for research across a range of disciplines in the life and mind sciences. The idea, rather, is that phenomenology is an “indispensable partner” (ibid.: 14) to these scientific efforts, its field of investigation being recognized as having an “ineliminable status” (ibid.: 87), and its accounts thereof being granted an ineliminable voice at the multidisciplinary table where the nature of mind, life, and nature is decided. Gallagher, I think, captures the gist of the “rethinking of nature” involved here well when he suggests that it is defined by “an insistence on a dynamical, multidimensional existence that requires a multidisciplinary approach that necessarily discounts every single discipline for the sake of the many,” where neither phenomenology nor any of the other disciplines have the final word, “because existence is never just one thing” (2018a: 135). Thus, the enactive naturalization of the mind takes the form not of reduction but of a “circulation” (Varela et al., 1991: xv) or “mutual enlightenment” (Gallagher, 1997) of phenomenological and scientific perspectives, a “mixed discourse” founded on concepts that are, as Thompson puts it, “essentially mixed or heterogeneous, in the sense that they cannot be factored into the dichotomous categories of the physical and the phenomenal, or the objective and the subjective” (2007: 359). The notion of the body as both lived and living is perhaps the clearest example of this kind of concept, and as such it stands as a paradigm for the enactive concept of nature.

A key task in what follows, which will be most explicitly addressed again in section 6, is to understand how this concept of nature emerges from and is justified by the hermeneutic practice of mutual enlightenment.

12.3 Enactivism as philosophy of nature

A general worry that might arise when presented with the ideas of the previous section concerns the extent to which the enactive concept of nature is scientifically legitimate. Do enactivists overstep their bounds when employing phenomenology in the context of science in this way? This, of course, is one of the driving questions of this article. In order to deal adequately with this issue, however, we first need to get a better grasp of the discourse to which it belongs.

To do this, we can begin by asking of enactivism what Peter Godfrey-Smith's asks about Developmental Systems Theory (DST): "What kind of theory is [it]? Is it a scientific theory or a philosophical theory? Is it an empirical hypothesis, a suggested program of research, a philosophical gloss on our existing knowledge, or what?" (2001: 283). Discussing these questions, Godfrey-Smith distinguishes between two kinds of science-related theory: research programs and philosophies of nature. A research program, as he defines it, is aimed concretely at contributing to a practice of research; it contains empirically testable ideas, and suggestions for particular directions research should take (ibid.: 284). A philosophy of nature, on the other hand, aims to "describ[e] the world as accurately as possible when a range of scientific descriptions are to be taken into account, and when a philosophical concern with the underlying structure of theories is appropriate" (ibid.). To accomplish this aim, it needs to be consistent with and informed by what science tells us about the world, but, importantly, it is also "free to reject the vocabulary and perhaps some of the classifications and interpretations of the world associated with the relevant sciences" (ibid.: 286). If, for instance, a certain metaphor or way of thinking has proved valuable for a research practice, it could still be an obstacle to the sort of overall picture that the philosopher of nature tries to paint. In such cases, the philosopher of nature is at liberty to replace it for something that might not be as useful to concrete research, but that is nonetheless more accurate when other scientific descriptions and philosophical concerns are taken into consideration.

As Shaun Gallagher (2017: 22) – following a suggestion by Cecilia Heyes – has already argued, there are good reasons to think of enactivism as a philosophy of nature in Godfrey-Smith's sense.[211] As he says, enactivism proposes an integrated framework for understanding

[211] Meyer and Brancazio (2022) pursue this idea further, though in a different direction from what I'm doing here. In short, where they focus on the conflict between enactivism and cognitivism, and the question of whether the former represents a paradigm shift relative to the latter (their answer is no), my aim is – as already stated – to elucidate the significance of phenomenological philosophy for the enactivist concept of nature. Neither phenomenology nor the concept of nature is explicitly thematized by Meyer and Brancazio. Though I'm not going to argue this point here, I'm inclined to

mind and life that avoids the "clunky robot" (ibid.) that often results from simply putting the theories of different disciplines together without amendment, but with the cost that some of its more general concepts and ideas are not necessarily directly useful in concrete research. The enactive concept of nature quite clearly belongs to this kind of project. That is, it belongs in the discourse of philosophy of nature in the sense that it is part of a framework that "comments on the overall picture of the natural world that science, and perhaps other types of inquiry, seem to be giving us," with the aim of "describing the world as accurately as possible" (Godfrey-Smith, 2001: 284). Drawing on insights from a range of scientific disciplines and philosophical considerations, the enactive concept of nature is proposed as the most accurate framework for understanding the natural world – at least the section of the natural world that involves minds and life.

That said, enactive theory does, as Gallagher acknowledges, contain ideas that are available for empirical testing, and it is able to "motivate experimental science in very specific ways" (ibid.: 23). Indeed, enactive ideas have inspired specific directions of research in various fields. For these reasons, enactivism as a whole does not belong "on the side of a philosophy of nature," *rather than* on the side of a research program, as some of Gallagher's formulations suggest (ibid.: 125). We can instead say, as Godfrey-Smith does with regard to DST, that it includes elements of both types of theory. These elements, moreover, are not always easily distinguishable within the enactive framework. Godfrey-Smith defines philosophy of nature as an enterprise that "comes *after* empirical science" and distinguishes it from a "'forward-looking' role of philosophy in relation to science" (ibid.; orig. emphasis). The methodology of 'circulation', however, which is intrinsic to the enactive idea of nature, clearly has a 'forward-looking' element to it. That is, it does not only prescribe an approach for dealing with what science has already discovered (though that is an important part of it), but also lays out a path for future scientific research practices in the mind sciences. The research programs of *neurophenomenology* (Varela, 1996, 1999; Lutz et al., 2002; Cosmelli et al., 2004; Petitmengin et al., 2007), *micro-phenomenology* (Petitmengin, 2006; Petitmengin et al., 2017)*, formalized phenomenology* (Marbach, 1993; Petitot, 1999), and *front-loading phenomenology* (Gallagher, 2003), for instance, are examples of phenomenology-science circulation being implemented in concrete research that is often explicitly conducted within an enactivist framework. Likewise, the 'dynamical systems ontology' represented by the notion of adaptive autonomy is for

think that these factors, with the significance I grant them here, would complicate some of Meyer and Brancazio's conclusions.

enactivists not simply a tool for interpreting scientific results after the fact but is also being brought to bear in concrete research.[212]

All this is to say that enactivism is not *solely* on the side of a philosophy of nature and, moreover, that the 'philosophy of nature' and 'research program' elements of enactivism – unsurprisingly – are closely connected. Keeping this in mind, I nonetheless think it is safe to say that the enactive concept of nature *as such* is neither an empirical hypothesis nor (only) a 'forward-looking' philosophy, but rather something aimed at doing the kind of job Godfrey-Smith ascribes to philosophies of nature. The question now is, how can we evaluate the credentials of the enactive concept of nature?

The only criterion Godfrey-Smith mentions as required for qualifying as a *good* philosophy of nature is that it stays consistent with the empirical claims made by science (2001: 284). This does however not get us very far in the present discussion, insofar as neither the enactive concept of nature nor its objectivist alternative is *inconsistent* with the empirical claims of science. Still, as we'll see below, critics of the enactivist concept of nature are worried that its non-objectivism and the role it ascribes to phenomenology make it unscientific, or at least not as naturalistic as one would want from a scientifically oriented philosophy.[213] Here we should note two things.

First, we should remind ourselves that Godfrey-Smith's idea of a good philosophy of nature allows for conceptual deviations from science as well as contributions from "other types of inquiry" and "philosophical concern[s]" (2001: 284). Philosophies of nature are not, on Godfrey-Smith's view, required to be naturalistic in the sense of being "completely continuous with science" so as to "giv[e] up the autonomy of philosophy with respect to its choice of questions" (ibid.). This makes sense. It would, it seems, be difficult for this kind of strict naturalistic philosophy to work as a philosophy of nature at all, since the very project of binding together insights from different disciplines arguably requires intellectual efforts and sensitivities beyond the methods and conceptual resources of any single discipline.

Secondly, objectivist and reductionist views also surpass what can be deduced from the empirical claims of science. Take, for instance, the argument that only the types of things described by the natural sciences are *really real*, and that, since irreducibly experiential structures presumably are not among those types, positing the existence of such structures conflicts with the scientific worldview. The first premise here is not an empirical claim of

[212] See e.g. the studies cited by Di Paolo et al. (2017: 35).
[213] See Sebold (2016) for the argument that phenomenology involves a naturalistically unacceptable ontology and methodology.

science, but a philosophical attitude regarding the significance of such claims, meaning that it can be disputed without contradicting any such claim. In other words, objectivism and reductionism are themselves positions belonging to the realm of philosophy of nature, in the sense that they are philosophical interpretations of the overall significance of scientific theories rather than scientific theories in their own right.

Granted that we are faced with two alternatives that are equally consistent with the empirical claims of science, how are we to decide whether or not we should accept the enactive concept of nature? Clearly, it is reasonable to expect there to be some constraints on what sorts of 'extra-scientific' efforts and sensitivities that are acceptable for philosophies of nature to be based on. Thus, the question becomes what further criteria – beyond consistency with empirical science – we should invoke in order to be able to decide which of the views to prefer.

Numerous factors are clearly relevant for such a decision. However, two of the most important ones are arguably *internal coherence* and *conceptual accuracy*. That is, of two philosophies of nature that are equally consistent with science's empirical claims, the most favorable, all other things being equal, will be the one with the most internal coherence and the most accurate grasp of the phenomena it aims to accommodate. In the next section, we'll see how the enactive-phenomenological rethinking of nature is motivated by two arguments relevant for these factors.

12.4 The transcendental status and relational nature of experience

Hardly anyone denies that accounts of lived experience are relevant for scientific approaches to the mind. Many of the features we associate with the mind are, after all, features that manifest as *lived* phenomena: perception, emotion, thought, self-consciousness, etc. Descriptions of how these features manifest experientially will thus often be relevant as *explananda* – specifications of what is to be explained – for scientific approaches to those kinds of mental features. And, even when lived experience as such is not the main thing to be explained, several experiments in the mind sciences nonetheless depend on their subjects' reporting about their first-personal experiences (e.g., whether or not, when, or how they are seeing stimuli presented to them).[214]

[214] As Gallagher and Zahavi observe, subjects' reports will involve the first-personal perspective even if they are not explicitly *about* their experiential states: "Even if one neutralizes the instruction in a way that carefully avoids any mention of an experiential state ('Push the button when the light comes on'), the only access that the subject has to the fact of the light coming on is by way of her experience of the light coming on. In this sense the first-person perspective is inherent in all experiments that depend on subjects' reports" (2012: 16-17).

Hence, if by 'phenomenology' we simply mean any kind of report about lived experience, the claim that phenomenology is an indispensable partner to cognitive science is not controversial.

Acknowledging this form of indispensability is however not the same as admitting that lived experience is irreducible in a way that requires a transformation of the classical concept of nature. It is perfectly possible to accept the necessity of using first-personal accounts as *explananda* for some scientific approaches to the mind, and still understand the explanations discovered by these approaches as cases of reducing features of lived experience to something compatible with the objectivist view of nature. In other words, acknowledging the heuristic value of lived experience for cognitive science does not commit one to any particular view about the *nature* of lived experience. Moreover, as is probably already clear, the 'phenomenology' involved in the enactive philosophy of nature is not just *any* kind of approach to lived experience, but a quite specific one at that, involving not so much 'first-personal reports' as a philosophical way of investigating and conceptualizing the mind. Thus, the question for us is: how can phenomenology in this specific sense motivate a rejection of the objectivist view of nature?

The transcendental status of experience

As mentioned, two arguments are especially significant in this context. The first is the argument from *the transcendental status of experience*. That experience has transcendental status means that it is the field wherein meaning, objectivity, and presence in general are, in phenomenological terms, *constituted*, in the sense of being brought forth, disclosed, or achieved. As such, experience is an inescapable condition for science. As Merleau-Ponty puts it, "[e]verything that I know about the world, even through science, I know […] from an experience of the world without which scientific symbols would be meaningless" (2012: lxxii). Experience, in other words, is the ground and medium for all human understanding: Any meaningful structure dealt with by human beings – be it empirical facts, linguistic or mathematical symbols and relations, or the perceived world in its everyday manifestation – is inescapably constituted as such *in* experience. Another way to put this point is to say that *subjectivity* is a necessary and constitutive condition for the manifestation of such structures.[215]

The recognition of this status of experience is key to enactivism's idea of the irreducibility and ineliminability of experience and, consequently, its rejection of objectivism (Thompson, 2007: 87). Objectivism, the argument goes, neglects this status of experience, and

[215] Importantly, as conceived by most phenomenologists, this transcendental subjectivity is one that is essentially informed by a *community* of subjects inhabiting a shared lifeworld, making it, in effect, a transcendental *intersubjectivity* (Zahavi, 1996).

posits what is in effect an abstraction from our experiential dealings with objects – the notion of pure, subject-independent objectivity – as the ultimate reality. But although it thus attempts to theoretically eliminate or reduce experience, it cannot escape the fact that it nonetheless *presupposes* the meaning-constituting structures of subjectivity as that which enables it to arrive at and make sense of the notion of pure objectivity in the first place. Such attempts, that is, will inevitably – *qua* dealing with meaningful and objective structures of the world – need to presuppose what they are trying to explain away, and as such they are ultimately self-undermining and inconsistent. "Objectivism," as Thompson puts it, "tries to purge nature of subjectivity and then reconstitute subjectivity out of nature thus purged," but in so doing "it forgets that physiological processes, as describable phenomena of scientific investigation, are also constituted in the phenomenological sense" (2007: 86). This, then, is the main motivation behind the anti-objectivist rethinking of nature advocated by enactivists. [216]

It should be noted here that the enactive-phenomenological case for the irreducibility of experience differs quite significantly from many other non-reductionist arguments found in the philosophy of mind. That is, the point here is neither that experience is some sort of private, ineffable qualia-filled spectacle that it is impossible to know in other ways than by enjoying the feel of 'what it is like' to experience (e.g., Nagel, 1974; Jackson, 1986), nor that there is lack of logical entailment between the physical and the phenomenal (Chalmers, 1996). In fact, enactivists tend to dismiss these kinds of arguments for relying on a too Cartesian notion of consciousness.[217] Rather, to repeat, what makes experience irreducible on the enactivist view is its status as *meaning-constituting presupposition*. Thus, experience is not conceived as a subjective 'leftover' beside an otherwise physical nature, but as the very manifestation of nature as such. This puts us in position to better understand the role of phenomenological philosophy in the enactivist 'circulation' of perspectives. The task of phenomenology, that is, is not to provide first-personal reports about the 'feel' of various experiences, but to elucidate the constitutive structures by which the world manifests as present, meaningful, and objective for experiencing subjects, including all scientific perspectives. From this perspective, the naturalization of experience becomes a question not of reducing the subjective to a purely objectivist account, but rather of showing how experiential structures can be illuminated through an integration of perspectives while keeping the structures' holistic, meaning-

[216] Enactivists often make a related point by reference to the *reflexivity* inherent in cognitive science. As Vörös and colleagues put it, "[t]he cognitive scientist reflecting on human cognition is herself a human cognizer engaged in cognizing" (2016: 191). See also Varela et al. (1991: 3-4), Stewart (2010: 27), and Fuchs (2018: xix).
[217] See e.g. Varela (1996: 333) and Thompson (2007: 230-235).

constitutive – i.e., phenomenological – organization intact. We'll return to this issue in section 6 below.

The relational nature of experience

Where the first argument concerned the *status* of experience as inescapable presupposition, the second concerns the *nature* of experience as *essentially relational*. This is a defining idea of the enactive approach, captured, as mentioned in the introduction, by the notion of *enaction* as a process of 'mutual shaping' of agent and environment. From the phenomenological perspective, the idea can be expressed in terms of the *world-involving* and *correlational* character of experience. The subject is defined by its inseparable involvements with its world, and this world is in turn defined, in the ways it shows up for the subject, as significant relative to the subject's projects and form of life. As Merleau-Ponty puts it in a passage that is a favorite among enactivists, "[t]he 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" (2012: 454).[218] Gallagher (2018a), in his case for the enactive-phenomenological rethinking of nature, exemplifies this idea through two key concepts: *affordance* and *situation*.[219]

The notion of an *affordance* is the idea that we experience our environment primarily as a field of possible bodily activities.[220] Chairs, for instance, are perceived as *affording* sitting on, cups *afford* grabbing and drinking, doors *afford* walking through, etc. This is an essential aspect of the embodied character that, from the phenomenological perspective, defines our experiential relation to the world. The notion of a *situation*, further, is the idea of a meaningful environment: we are situated not within objective, neutral surroundings, but in a world that *matters* to us. As such, the field of affordances is part of our situation, interwoven with the other dimensions of significance – affective, intersubjective – which we are embedded in and relate to throughout our lives as experiential beings. In this way, both *affordance* and *situation* are concepts that express aspects of the idea of agent-world correlation, or co-definition. Affordances, as Gallagher observes, "show up only in relation to the perceiver's body or skill, and so they necessarily include the perceiver in their definition" (2018a: 130). And similarly,

[218] Quoted by Varela et al. (1991: 4), Thompson (2007: 247), and Di Paolo (2018: 71), among others.
[219] Gallagher connects the notions of affordance and situation respectively to the works of the psychologist J.J. Gibson and the pragmatist John Dewey, neither of whom are phenomenologists *per se*, but he also makes it clear that he understands the concepts as grounded in a phenomenological elucidation of experience (2018a: 130).
[220] An idea that can also be found in Heidegger's (1996) notion of 'readiness-to-hand' and Merleau-Ponty's (2012) notion of 'motor-intentionality'.

"the situation is composed of the subject or agent in relation to the environment. An organism never exists (and can never exist) apart from some environment; an environment is what it is only in conjunction with a particular organism that defines it" (ibid.). Affordances and situation, in other words, are essentially and hence irreducibly relational phenomena: they are what they are only as structures encompassing and co-defining agents and their environments.

This, the argument goes, spells trouble for the classical – objectivist and reductionist – concept of nature. The idea is, first, that these phenomena's relational nature is such that any attempt to reduce them to their component parts – such as brain functions – is doomed to lose sight of or obscure what one seeks to account for. In Gallagher's words, "[i]f reductionist programs are meant to provide an explanation of cognition strictly in terms of brain function, without reference to affordances that are defined by relational properties of body-environment, then in this quarter reductionism will fail" (ibid.: 131).[221] Further, and crucially, one does not overcome the problem by simply rejecting neuro-reductionism in favor of relationism, as long as the latter is construed in *objectivist* terms – i.e., if it fails to recognize that the relationality in question is a case of meaning-constitution *for* an embodied agent. It is, in other words, not sufficient for accommodating the relational nature of experience simply to account for it in terms of a relational brain-body-environment system – one further needs to construe this system as one that instantiates an irreducible dimension of meaning and subjectivity. This point was not – as he himself acknowledges (2018b: 235n1) – clearly enough articulated in Gallagher's original article, leading some of his critics to point out that objectivism is perfectly capable of accounting for relational phenomena. It is therefore important to emphasize that it is not relationality as such but the *kind* of relation characteristic of experience (affordance, situation) that motivates a rejection of the objectivist concept of nature. I'll return to this point in the discussion below.

Phenomenological constraints?

As mentioned, the arguments from the transcendental status and relational nature of experience concern the internal coherency and conceptual accuracy of the objectivist concept of nature. The former argument, we have seen, claims that objectivism is incoherent in the sense of being self-undermining – a point that can also be elaborated by saying that the objectivist view of nature is unable to accurately grasp the nature of experience. The point about accuracy is then

[221] Arguments like this are widespread in the enactivist literature. See, e.g., Noë (2007: 235), Thompson and Diego (2011: 165).

further emphasized by drawing attention to the form of relationality that is essential to experience.[222]

Insofar as both of these arguments are grounded in phenomenological considerations, we have thus here seen an example of phenomenology being used as a *constraint* on scientific approaches to the mind and, more generally, on what kind of notion of nature that is required for adequately accounting for the mind. The question now is: is this a convincing case? Does it provide adequate justification for rejecting the classical objectivist view of nature in favor of the one advocated by enactivists?

Gallagher (2018a), as said, makes use of both of the above arguments in his case for the enactive-phenomenological rethinking of nature – and the objections his proposal was met with indicate that more needs to be said about the role phenomenology is granted in this picture. More specifically, we need a better grasp of exactly *how* phenomenology is meant to inform scientific views here, and what form of authority and legitimacy this is supposed to involve.

In the remainder of this article, I'll try to contribute to this task through a discussion of Hohwy's (2018), Sachs' (2018), and Vázquez and Wheeler's (2018) responses to Gallagher. The main concern raised by all of these is that the involvement of phenomenology in the enactivist concept of nature is somehow naturalistically illegitimate. Here we should remind ourselves that, insofar as the enactive-phenomenological rethinking of nature is a move performed at the level of philosophy of nature, as I've argued that it is, there is room for considerations beyond the empirical claims of science to play a legitimate role. What we need to understand, then, is how the enactivist view can defend itself against accusations to the effect that it grants phenomenology an unacceptable role. I start, in the next section, by addressing Vázquez and Wheeler's worry that adopting a non-objectivist concept of nature threatens to undermine the objectivity of science and their proposal for two ways of letting phenomenology inform cognitive science that is compatible with the objectivist view.

[222] There are also other phenomenological concepts that seem to support non-reductionistic and emergentist ontologies. Reynolds (2020), for instance, gives an enlightening exposition of connections between emergence and the phenomenology of embodiment.

12.5 Objectivity and naturalism

According to Vázquez and Wheeler, "the loss of the classic scientific conception of nature is a cost that Gallagher pays in order to secure the relevance of phenomenology to cognitive science" (2018:148-9). It is a cost, they claim, because "it remains plausible that the epistemic authority and integrity of science in society at large depend on the idea that its reasoning is objective" (ibid.: 149). In other words, the enactive-phenomenological rethinking of nature challenges the idea that science is objective, which in turn threatens to undermine science's standing in society.

This worry seems to rest on a mistaken conflation of objectivity and objectivism. That is, by rejecting the latter one does not necessarily reject the former. Gallagher makes this clear in his reply to Vázquez and Wheeler: "I think of objectivity as a methodological or epistemological virtue, in contrast to objectiv*ism* – the idea that we treat everything, including subjects or relations, as mere objects" (2018b: 235; orig. emphasis). Objectivity as an ideal of science consists of such factors as intersubjective validation, replicability of results, and sound reasoning – none of which requires a specific concept of nature in order to be preserved. What's more, the claim that subjectivity is incompatible with objectivism does not mean that it is beyond grasp for any form of objective investigation. Indeed, as Gallagher points out, "[p]henomenology itself, classically, has tried to be an objective study of subjectivity – a study that brackets the phenomenologist's biases and pre-judgments, and that tries to steer clear of preconceptions and pre-established theories" (ibid.). To this we can add that phenomenology from the start has been conceived as requiring an "intersubjective communal practice" of phenomenologists testing and verifying each other's results (Belt, 2020: 17), and that phenomenological reflection, far from dealing in mysterious 'merely subjective' evidence, proceeds by philosophical argumentation open to rational critique (Zahavi, 2017: 14). It is precisely because phenomenology in this way represents a systematic and disciplined approach to subjectivity that enactivists see it as a useful partner to cognitive science. Of course, the objectivity of phenomenological results is not of the sort that can be decided through natural scientific measurements, but holding that such results nonetheless are able to grasp irreducible features of nature poses no threat to the idea of science as objective.

Fearing that the "cost" of rethinking nature is too high, Vázquez and Wheeler suggest two alternative ways that the relevance of phenomenology for cognitive science can be preserved. Although I've already rejected that there is a cost to worry about here, considering

these alternatives will help us gain a clearer view of the nature of enactive phenomenology and its relation to science.

Minimal naturalism and the practice-centered view

The first alternative, which seems to be their preferred option, is "minimal naturalism." As they see it, this view is able to retain the classic scientific concept of nature without subscribing to any "global reductionist ambitions" (2018: 150). Minimal naturalism is defined by "the principle of conflict resolution," according to which

> if and when there is a genuine clash between philosophy and some eminently well-supported (by the data) empirical science, then there is an obligation on the philosopher to revisit her claims, with a view to withdrawal or revision. The envisaged clash, on its own anyway, places no such obligation on the scientist. (2018: 150; see also Wheeler, 2013)

Here philosophy, including phenomenology, is given permission to inform science as long as it stays within certain limits. If it turns out that a robustly supported scientific view disagrees with what phenomenology is saying, then it is phenomenology, not science, that must yield. The thought here seems to be that the classic concept of nature is preserved in the sense that it is objective science, and not phenomenology, that "calls the shots" (Vázquez and Wheeler, 2018: 149), while the relevance of phenomenology for cognitive science is still preserved as long as it adheres to the principle of conflict resolution.

Vázquez and Wheeler's second alternative is a practice-centered view, which understands the relation between phenomenology and cognitive science in light of how exchanges between them work in practice, rather than as requiring any particular concept of nature. Here, the distribution of authority between the different perspectives will vary with the purpose of each encounter. Thus, "if [phenomenological] approaches were to result in bad science, they would be rejected as conceptual frameworks for scientific research, and that particular collaboration between phenomenology and cognitive science would be over" (ibid.: 153). And likewise, phenomenologists are free to interpret and employ science in the ways that best suit their philosophical projects: "Any collaboration will be regulated by the practice within which it is framed, rather than by the ultimate authority of one discipline over the other" (ibid.: 155-6). As assessed by Vázquez and Wheeler, this view has the benefit of making sense of collaborations between phenomenology and science in a way that "does not in itself require the rethinking of nature," but it comes with a cost of its own: by refraining from giving science the ultimate authority in all exchanges with phenomenology, it does not adhere to the principle

of conflict resolution, and hence "no longer counts as a species of even the minimal kind of naturalism" (ibid.: 156).

Now, how can these two alternatives help us to better understand enactive phenomenology? Let's start by acknowledging a shortcoming with the 'minimal naturalism' alternative. It is certainly sensible to demand that phenomenology, at least if it wants to be a helpful partner to science, does not operate under the illusion of having the power to dismiss "eminently well-supported (by the data) empirical science." The extent to which the principle of conflict resolution is *relevant* when it comes to phenomenology's relation to science is however questionable. As Jack Reynolds puts it, "direct contradictions between the evidences of phenomenology and those of empirical science are rarer than one might think" (2017: 43). Indeed, one will have a hard time finding any such direct contradictions. This is not because the phenomenological domain is completely separate from that of science, so that no frictions between the two ever occur. Rather, it is because most phenomenological claims are not directly translatable to hypotheses the truth and falsity of which can be fully decided by empirical testing. Thus, as Gallagher notes in his reply to Vázquez and Wheeler, negotiations between phenomenology and science are "not usually about 'empirical data that enjoy collective support from a community of scientific experts and which indicate that the existing science is in perfectly good shape.'" Rather, "if the data are in good shape, the real negotiation is about the interpretation of those data" (2018b: 237).

This is what the enactive-phenomenological rethinking of nature is about: rejecting an objectivistic interpretation of cognitive science in favor of one that acknowledges an irreducible status for phenomenology. Hence, despite what is insinuated by presenting minimal naturalism as a "competing" option (Vázquez and Wheeler, 2018: 156) to Gallagher's proposal, there is nothing in the latter that involves violating the principles of the former. With this in mind, it seems that minimal naturalism, though expressing a reasonable way to handle genuine conflicts between phenomenology and science were they ever to arise, is largely impotent as a framework for thinking about the exchanges between phenomenology and science that are *actually* taking place.

This means, further, that there is little reason to worry about the 'anti-naturalistic' inclinations of the second, practice-centered alternative. Although this alternative is not defined by an a priori commitment to the principle of conflict resolution, it is hardly realistic, in light of what we have just seen, that one will ever encounter a practice of phenomenology-science interaction that benefits from letting phenomenology overrule empirical scientific results that are in perfectly good shape. Assuming that this is correct, the practice-centered view has a lot

going for it. After all, if we want to assess the relevance of phenomenology for cognitive science, the best measure is arguably the extent to which phenomenological ideas, in Zahavi's words, "*make a valuable difference*" (2019: 7; my emphasis) in the contexts where they are employed, rather than what autonomous philosophical considerations might claim *ought* to be the case.

The question now is, is this a measure that can be applied to the enactive-phenomenological rethinking of nature? Here we can note that, while Vázquez and Wheeler are correct to point out that the practice-centered view *in itself* does not require us to rethink the concept of nature, it is also the case that it does not in itself require us to preserve the objectivist concept of nature. Which concept of nature we should prefer, or indeed whether we need a specific concept of nature at all, will rather from the practice-centered viewpoint be a question about how the different options fare in the relevant practical context. In this case, the relevant context is that of establishing a philosophy of nature, meaning that the practice in question is largely theoretical and philosophical. This admittedly makes it more difficult to decide the issue than in the cases where phenomenology is employed as part of concrete research programs, where signs of success and failure are more tangible. Nonetheless, there are clearly also ways to make valuable differences in a theoretical landscape. One way to assess the value of a philosophy of nature is by looking at the extent to which it makes coherent sense of its domain and ensures that the facts from various scientific fields 'hang together' and are interpreted in adequate ways.

This, of course, brings us back to the task of evaluating the justifications for the enactive-phenomenological rethinking of nature. And it also goes to show that the practice-centered view and the non-objectivist concept of nature are not incompatible in principle, and – again – not necessarily "competing options" (Vázquez and Wheeler, 2018: 156), but that it on the contrary is possible to argue that the latter can be justified by way of the former.

This – i.e., that the enactive-phenomenological concept of nature emerges and is justified through a form of practice – is precisely what I'll be arguing in dealing with Hohwy's and Sachs' objections below.

12.6 Getting integrated

These objections are, first, that science is able to grasp relational phenomena without the help of phenomenology, and second, that the enactive-phenomenological concept of nature grants an illegitimate amount of authority to phenomenology.

Giving expression to the first of these, Sachs argues that "[a]ffordances are relative to behaviour, not to subjective experience; they are fully available from the third-personal standpoint of the cognitive scientist, and no phenomenology is required to bring them into our cognitive purview" (2018: 231). In a similar vein, Hohwy states that "there is reason to believe that phenomenology can be explained without needing to abolish the classical conception of nature and its reductionist aspirations" (2018: 142). To support this, Hohwy points to how the predictive processing framework in computational neuroscience can define affordances as "those states of the world that afford expected high rates of prediction error minimization through action" and thus accommodate the required perceiver-inclusion in the notion of affordances while still treating subjects as "one cause interacting with other causes in a way that can be captured in fully causal-statistical descriptions" (ibid.: 142).[223] Despite variations in technical detail, the idea underlying Sachs' and Hohwy's objections to Gallagher is nonetheless the same: relational phenomena can be captured in objective terms and do therefore not require us to rethink the concept of nature.

From this perspective, the motivation for rethinking nature seems to stem purely from phenomenology and not from the sciences, giving the impression of the former assuming the role of an 'ontological dictator' over the latter. "For good naturalists," as Sachs says, "explanations are preferred due to epistemic virtues internal to scientific practice; hence phenomenological descriptions of those phenomena cannot help us chose [sic] which explanation is better *qua* science" (2018: 232). Using phenomenology in that way, he claims, would amount to "letting our metaphysics drive our science in a way that naturalists ought to eschew" (ibid.). Is this really what is going on?

[223] The underlying view here is that of the mind as essentially a predictive process working to minimize the chances for surprising events through its activity. Here, experience is seen as a predictive model, and affordances as features of experience that the mind expects to be able to act on in certain ways with a high degree of precision. Thus, affordances are results of an object's (the predictive mind) statistical computations, causally influenced by external stimuli and its own activity. For more detailed expositions of the predictive view, see Friston (2010) and Hohwy (2013). See Zahavi (2018) for a phenomenological critique of the predictive coding framework, and Di Paolo et al. (2022) for a discussion of the discontinuities between the predictive coding-associated free energy principle and the enactive view.

What goes wrong in these objections, I'll argue, is the presupposition of an *initial separation* between phenomenology and science. This presupposition manifests in different ways in Sachs and Hohwy. For Hohwy, the possibility of 'objectivizing' phenomenological accounts means that phenomenology *reduces to* nature as described in third-personal terms. Here, the phenomenological *as such* is rendered external to science, in the sense that it can be incorporated into the objectivist view of nature in non-phenomenological terms. Sachs, on the other hand, rejects this form of reductionism. He insists that there is a "*categorical difference*" between the domains of phenomenology and science (2018: 232; my emphasis). Science, he says, has "no bearing" (ibid.) on phenomenology, just as phenomenology does not have the authority to dictate the ontology of science.[224] However, despite their difference concerning the issue of reduction, Sachs and Hohwy share the assumption of there being a neat division of labor between phenomenology and science. Given this assumption, claims to the effect that the domain of the latter needs to adjust in order to make room for insights from the former will naturally appear dubious: Why should we let our scientific view of nature be determined by considerations belonging to a completely different kind of intellectual enterprise?

Matters change, however, if we rather assume that there is *no strict separation* between phenomenology and science. In what follows I'll try to motivate this idea. In so doing, I'll draw support from one of Gallagher's (1997) earlier articles, where he discusses the prospects of a *mutual enlightenment* between phenomenology and cognitive science.

The transcendental in the natural

As already mentioned, the argument from the relational nature of experience is not that objectivism is unable to account for *relations*, but that it is unable to capture the *kind* of relation of which experience is constituted. Affordances, for instance, are not simply objective relations between biological systems and their physical surroundings, but relations that mean something *for* the systems in question, within their form of life: When the cup in front of me *affords* my drinking behavior, that is because it appears to me in a distinctive way, manifesting a specific significance for me as a culturally situated and embodied human subject. It is this relation of *existential meaning* that resists full objectification. Now, this way of phrasing the limitation of objectivism is in some ways similar to the infamous 'hard problem' of consciousness (Chalmers, 1996), according to which it is seemingly impossible for objective accounts to

[224] To be fair, Sachs is explicitly sympathetic to the enactivist idea of 'fusing' the scientific image with phenomenology (2018: 232). However, his claims that affordances are capturable in purely third-personal terms, and that phenomenological concerns are strictly separate from scientific ones, indicate that he presupposes a distinction between the two domains that I'll argue is problematic.

explain subjective experience. Here it is however important to remember what we saw in section 12.2: that the enactive concept of nature, rather than presupposing a metaphysical separation of the mental and the physical, or the subjective and the objective, is centered on the paradigm of the *body* as an integration of lived and living dimensions – a phenomenon that on this view is to be accounted for through a *mutual illumination* between phenomenological and biological perspectives. The claim is in other words not that affordances belong to a purely subjective domain defined in opposition to a purely objective one, but that objective-scientific accounts of mental phenomena need to be informed, in a non-reductive way, by phenomenology.

This is however not sufficient for rejecting Sachs' and Hohwy's claim that objectivist cognitive science is sufficient for accounting for phenomena such as affordances. That is, the above paragraph simply presupposes the necessity of letting phenomenology inform cognitive science, when what we need is an explanation of *why* phenomenology, with its positing of irreducibly meaningful relations, should be granted this role in the first place.

The objection that non-phenomenological science is sufficient for capturing the phenomena of affordances and situation presupposes that it is in fact possible to separate the domain of science from that of phenomenology. To see why this presupposition is problematic, we can return to the topic of experience's transcendental status. That experience has this status means, to repeat, that experience is the medium wherein every form of entity that human cognition can encounter is constituted, in the sense of manifesting with the meaning it has for us. Now, insofar as phenomenology is the study of experience's meaning-constitutive structures, and all of science necessarily operates on the ground of these structures, it seems correct to say, as Gallagher does, that "third-person explanations in general are [not] entirely free of phenomenological elements," but are rather "unavoidably constrained" by such elements (1997: 207, 208). In proposing a scientific account of a phenomenon (e.g., affordances), scientists invariably rely, either implicitly or explicitly, on an idea of what the account is an account *of,* i.e., a delineation of the phenomenon in question. This idea is what makes sense of the scientific account as an account of a given phenomenon, for instance by guiding the interpretation of experimental results. Now, insofar as it enables the scientists to identify their phenomenon of study, this idea must somehow manifest in their field of experience, distinguishing (more or less provisionally) the factors of the experienced world that are part of or relevant to the phenomenon in question from those that are not. In this way, science is constrained by experiential elements in the sense that it is by virtue of such elements that any scientific object is delineated. And further, there is a potential for phenomenology, as

the study of the structures of experience and the meaningful manifestation of phenomena, to play a constraining role vis-à-vis the sciences by illuminating and critically assessing the delineations of phenomena that are at work in their efforts.

This is how we should understand the argument from the relational nature of experience. That is, the dimension of existential meaning characteristic of affordances is not simply an accidental or epiphenomenal feature of a phenomenon that is 'really nothing but' what can be captured in an objectivist account. Rather, it is something that is *presupposed* by any objectivist account insofar as it aims to account for affordances, because it is part of how affordances manifest experientially and hence of what lets us *delineate* them as instances of a distinct type of phenomenon in the first place. In other words, the phenomenon we call 'affordance' is *essentially defined* by the presence of a meaningful relation between an organism and its environment – this characteristic is part of what enables us to distinguish instances of affordance-relations from instances that are not affordance-relations.[225] From this perspective, then, objectivist models of affordances should be discarded because they distort the very condition for the possibility of delineating the phenomenon they are meant to explain.

In the case of affordances, as with many other psychological phenomena, there is a double sense to the idea of experiential manifestation: affordances manifest both as a feature *of* how each of us is first-personally engaged with our perceived surroundings, and as a phenomenon that can be observed *in* the behavior of other (human and non-human) organisms. Sachs is thus right in claiming that affordances need not be "introspectively available," since they can be displayed in behavior without the organism "being aware that it is doing so" (2018: 231). However, the fact that affordances manifest in observable behavior in this way does not mean that "they are fully available from the third-personal standpoint of the cognitive scientist" and that "no phenomenology is required to bring them into our cognitive purview" (ibid.). At least not, that is, if we understand the third-personal standpoint of cognitive scientists as detached from any acknowledgment of subjectivity as such, and phenomenology as a way of articulating and clarifying the meaningful manifestation of phenomena. For, the fact that affordances have an observable manifestation does not change the fact that they are defined as *meaningful* organism-environment relations that cannot be fully accounted for without

[225] I'm not saying that it is always *easy* to discern actual affordance-relations from non-affordances. For instance, it is certainly possible to design artificial systems that interact with their surroundings in ways that *resemble* meaningful affordance-relations without it actually being the case that the surroundings manifest as meaningful *for* the system itself. It is however only possible to be fooled by such cases insofar as they are *derived from* – designed to imitate – the 'real thing'. See Netland (2022) for further discussion of this kind of issue.

explicating this meaning – i.e., the environment's presentation as significant *for* the organism – in its own terms.

This means that, in order to explain what goes on at the behavioral or experiential level, a description *purely* of what is happening at the level of subpersonal processes – whether these are understood in neuro-centric or relational terms – will never be sufficient. In Merleau-Ponty's words, "scientific thematization and objective thought will not be able to find a single bodily function that is strictly independent of existential structures" (2012: 455). To understand a subpersonal process, one must understand its function, and understanding its function requires one to recognize the role it plays in the holistic mode of existence – the *structure of behavior* (Merleau-Ponty, 1962) – of the organism in question. As Gallagher argues in his reply to Hohwy (2018b: 241), one does not make full sense of subpersonal processes simply by describing *how* they work – one also needs an understanding of *why* the relevant processes take place, in the sense of knowing *what* they are contributing to achieving. Subpersonal processes, in other words, have a *meaning* determined by the overall existential project they partake in serving. In his earlier article on mutual enlightenment, Gallagher makes the same point by stating that consciousness "does not simply supervene on neuronal activities; neuronal activities will depend on the behavioural [i.e. meaningful] context within which consciousness itself functions" (1997: 210). These structures of meaning are only available if we take into account the organism's lived perspective and its holistic mode of existence. Phenomenology, then, offers a way to illuminate these meaning-manifesting structures, providing a clearer idea of the phenomenon that the subpersonal processes partake in accomplishing.

Now, importantly, just as third- and subpersonal approaches cannot be completely separated from the phenomenological perspective, phenomenology cannot be conceived as radically distinct from such approaches. First of all, as we noted in the discussion of Vázquez and Wheeler above, its aim is to arrive at a form of objectivity about its subject matter – something that holds true not only for *me* at this moment, but for all experiencing human subjects, and which can stand the test of intersubjective scrutiny. Secondly, as we have just seen, structures of subjectivity and experience manifest not only as structures *of* the first-personal perspective, but are also revealed *in* observable behavior *as* empirical phenomena that are also available for the sciences, manifesting aspects that can be illuminated from a plurality of scientific perspectives. Indeed, on enactivists' Merleau-Ponty-inspired understanding of phenomenology, the phenomenological project is not methodologically limited to first-personal reflections, nor does it see the domain of such reflections as essentially separable from the domain of observable behavior. This has to do with the essentially embodied and

intersubjective nature of subjectivity as it is revealed phenomenologically. To be a subject, on this view, is to be a bodily form of existence, dependent upon "impersonal functions" (Merleau-Ponty, 2012: 167) beyond the grasp of one's first-personal reflections, and defined by one's inhabiting an intersubjective world where one appears precisely as experienceable bodily beings to each other, and where one's capacity for reflection is enabled by the linguistic and cultural resources present in this shared world. This means, in short, that although first-personally lived experience is primordial in the sense of being that through which observable phenomena are observed, any conceptualization of lived experience will inevitably presuppose and draw on factors from the world 'outside' the lonely, self-reflecting subject.

One implication of this is that phenomenology's domain is not simply a pre-established, *a priori* template to be filled by the *a posteriori* discoveries of empirical science, as if the latter were the mere contingent content of forms already fully specified by pure phenomenological reflection. Rather, as Merleau-Ponty argues, by uncovering experience as a world-involving *structure of existence*, phenomenology commits itself to the view that the 'essences' studied by phenomenology are *engrained in* and *constituted by* the factual, contingent nature in which they appear (1964: 72; 2012: 229). This, further, makes it "extremely difficult" (1964: 66) to draw up a strict division of labor between phenomenological and scientific approaches to mental phenomena, because the knowledge generated by the latter will always involve the potential for a renewed phenomenological insight into the essence of the phenomenon in question.

From this perspective, the phenomenological project of illuminating structures of experience should be understood as involving what Glenn Braddock calls a "pluralistic" or "indirect" methodology where, as he says, "first-person reflection and self-evidence are de-centred and rendered non-foundational factors in a broader interpretive phenomenological procedure" guided and constrained by evidence coming from "all sorts of sources," such as "expert phenomenological reflection, the reports and behaviour of both normal and dysfunctional subjects, cognitive psychological experimentation, the structure of the brain, and so on" (2001: 12). Thus conceived, the phenomenological perspective incorporates both first-, second-, and third-personal approaches as relevant for illuminating its subject matter, without that entailing that this subject matter is reducible to purely objectivistic accounts. The key point, as Braddock notes, is that we here, rather than seeing phenomenology as "a pure level

of subjective description," understand the phenomenological – i.e., the meaning-manifesting constitution of phenomena – as "a real and irreducible level of organization" (ibid.: 13).[226]

Summing up, I've here tried to motivate the idea that the domains of phenomenology and science are not separate but *integrated*: not only does phenomenology specify the meaning-constitutive structures required to make sense of the phenomena studied in cognitive science, but these structures should in turn be understood as forms of organization realized *in* and *through* factual, natural existence.

The explanandum-explanans model

Now, even if one accepts that the *domains* of phenomenology and science are intertwined in this way, one could still try to keep them separate in another way by claiming that their *functions* are distinct. The idea here would be that whereas phenomenology is a *descriptive* enterprise, science is *explanatory*. This apparently gives a neat division of labor between the two, where the former's descriptions can work as *explananda* (specifications of phenomena to be explained) to which science can attach *explanantia* (explanatory accounts). Alva Noë has compared the role phenomenology is ascribed in this model to that of a "crime scene description" (2007: 233): its task is to identify the initial problem for the cognitive scientist's investigation, systematically outlining features of the scene that need to be accounted for. So, for instance, the phenomenological insight that perceptual experience is characterized by affordances has the function of pointing out a feature of perception that must be accounted for by cognitive scientists that seek to understand and explain perception.

There is, as we briefly acknowledged at the beginning of section 4, clearly something correct about the explanandum-explanans model of the relation between phenomenology and cognitive science. Phenomenology does provide accounts of mind-related phenomena that scientists can take up the task of trying to explain. This picture also seems to be compatible with what we have just seen concerning the integration of the phenomenological and scientific domains. From that perspective, we could say, phenomenology can help clarify science's *explananda* by illuminating the delineations of phenomena that must be presupposed in order to make sense of scientific explanations, and in its search for explanations science can in turn enable novel descriptions of (aspects of) phenomena, which can inform the phenomenological project. The explanandum-explanans model even allows us to make sense of phenomenology exercising a form of constraining function vis-à-vis cognitive science. After all, insofar as

[226] This conception of phenomenology is similar to Jack Reynold's (2018: 33) notion of "minimal phenomenology."

cognitive science aims to explain the phenomenological crime scene, its explanations can be evaluated and criticized in light of both whether the crime scene descriptions they proceed from are adequate and how well they are able to explain them. Hence, insofar as the notion of affordances adequately describes a key feature of perception's experiential manifestation, then it represents a *constraint* on cognitive scientific accounts of perception in the sense that it requires them to somehow be able to account for this feature of perception.

As outlined thus far, however, this model is not incompatible with the views espoused by Gallagher's critics. From the perspective of Howhy's reductionism, phenomenology might very well provide *explananda* for cognitive science: his main point is that explanations of phenomenological descriptions can qualify as *reductions* of phenomenology to cognitive science. Sachs, on the other hand, subscribes explicitly to the explanandum-explanans model, and claims that it represents a reason to *reject* that phenomenology is reducible to cognitive science, since, as he says, "intertheoretic reduction holds between *explanantia*," not between *explanandum* and *explanans* (2018: 233). Here Sachs is on to a point that we have already considered: if the *explanandum* is that which makes sense of an explanation as what it is an explanation *of*, then it is presupposed by the explanation and cannot be replaced by or reduced to it. At the same time, as we have seen, Sachs insists that phenomenology belongs to a separate domain that has no authority over the scientific concept of nature and argues that third-personal science is sufficient for grasping phenomena such as affordances. Despite their differing views on reductionism, then, Sachs and Hohwy seem to share a basic presupposition regarding their relation; namely, that phenomenology has a mere heuristic, not ontological, significance for cognitive science, and that the division of labor between the two (as *explanandum* and *explanans*) is clear-cut and fixed.

Underlying this line of thinking is the idea that phenomenology is a merely descriptive discipline, which as such is explanatorily and ontologically impotent because it looks only at how things *seem* to be and does not dig into their real nature. We can use the crime scene analogy to illustrate this. Consider what a *mere* description of a crime scene would be. Here, the describer's job would be to register the features of the scene, and *only* those features discoverable in the scene itself, in as neutral terms as possible and without reflecting on how they connect to each other or to events beyond the scene. This kind of description is explanatorily impotent: it leaves all the work of 'connecting the dots' and actually understanding the scene up to a separate, investigatory effort.

Not only is this a flawed caricature of what is going on at actual crime scenes – there are also good reasons to reject it as a picture of what phenomenology is doing. True,

phenomenology is often characterized as an enterprise characterized by *description* rather than explanation, where the latter is understood as the project of identifying phenomena's underlying (efficient) causes. While there might be something to this distinction, 'description' must here nonetheless be understood as involving more than *mere* description. Phenomenology aims to understand *how* meaning and presence manifest in lived experience, and this project cannot be accomplished by simply listing features of experience in a neutral way. We've already seen that phenomenology involves a search for invariant and intersubjectively shared structures of experience, and that this – due to experience being uncovered as a structure of embodied existence – requires an indirect and pluralistic approach. Clearly, arriving at 'descriptions' of such structures requires forms of intellectual activity beyond *mere* description. Indeed, many argue that significant parts of the phenomenological project are better understood as *interpretative* rather than purely descriptive.[227] The idea, in short, is that phenomenology involves theorizing about processes and structures that are not directly given *in* experience but are posited as the best ways to make sense of various experiential features.[228]

Keeping with Noë's crime scene analogy, what we see here is a crime scene describer that does not simply register the visible features of the scene in neutral terms but rather is already involved in a project of *understanding* the scene by reflecting, aided by a conceptual framework and non-descriptive forms of reasoning, on how various features might be connected to each other and to factors that are not immediately present in the scene itself. In other words, the phenomenological crime scene description is already a *theory of the crime*, with its own explanatory aims and ambitions.

The next step is to recognize that, in the relation between phenomenology and cognitive science, the roles of *explanandum* and *explanans* are not fixed but interchangeable (Bitbol, 2012: 172). In other words, phenomenology's role here is not only to be *explained by* but also to *explain* findings in the cognitive sciences. Now, the notion of explanation at play here is clearly broader than narrow views of scientific explanation according to which explaining a phenomenon means to identify its efficient causes and the deterministic laws by which it

[227] Thompson (2007: 317) makes this point regarding phenomenological accounts of pre-reflective experience, and Gallagher (1997: 207) makes a similar point regarding Husserl's analysis of the temporal structure of consciousness. When Heidegger (1996) elucidates the 'ready-to-hand' mode of being that things display in our absorbed and practical dealings with them by drawing attention to the contrasting experience of breakdowns in such dealings (e.g., the hammer breaks), and Merleau-Ponty (2012) develops his notion of 'motor intentionality' through comparisons of how 'normal' and pathological subjects interact with their surroundings, they exemplify forms of indirect, interpretive approaches to pre-reflective experiential structures.

[228] See Reynolds (2022) for an account of the significance of abductive reasoning in phenomenology.

abides, so as to enable predictability. To invoke Aristotle's terminology, insofar as phenomenology provides explanations, they are not of the *material* or *efficient*, but rather of the *formal* and *final* kind, pertaining respectively to the *what* and the *why* of the phenomena in question.[229]

We have already seen one example of phenomenology providing a formal explanation above: Presented with a scientific account of e.g. the brain processes supposed to facilitate an organism's affordance relation to its environment, phenomenology offers a way to explain *what* it is these processes are facilitating, i.e., what is going on at the level of the organism's meaningful involvement with its environment that determines the functions of the neural processes as parts of the whole. To uncover such experiential relations phenomenologically also involves clarifying the *motivational forces* driving the subject's behavior and experiences, i.e., that towards which they are directed (the *why*) and which thus constitutes the meaning of the subject-world interaction. If, for instance, I exploit the cup-affordance in front of me by reaching for the cup and taking a sip of coffee, this behavior can be explained by pointing to, among other things, the cup's significance *for me* as an object capable of satisfying my desire for coffee and, in the larger context, of enabling me to stay awake and focused in the project I'm currently engaged in. Explicating how structures such as embodiment, affectivity, intersubjectivity, and temporality partake in the cup's meaningful presence for me, phenomenology specifies conditions constitutive of the affordance-relation's manifestation as an intelligible whole, and can as such serve to explain (i.e., make sense of) aspects of the phenomenon disclosed through other (e.g., neuroscientific) approaches.[230]

An important point here is that this significance of the phenomenological perspective is, for enactivists, not confined to explanations of *human* minds and behavior, but also extends to non-human organisms: Hans Jonas' (1966) and Merleau-Ponty's (1963) existential and phenomenological analyses of non-human living organisms as self-individuating and purposive beings are central sources of inspiration for enactivists' naturalization of mentality through the thesis of mind-life continuity (Weber and Varela, 2002; Di Paolo, 2005;

[229] I'm here treating the idea of phenomenological explanation in broad strokes, which is sufficient for my purposes. One can however distinguish between a variety of different kinds of explanation that phenomenology can offer. See Sass (2010; 2014) for a systematic treatment, and Fuchs (2022) and Stendera (2022) for more recent discussions of the explanatory potential of phenomenology.

[230] In David Morris' words, phenomenology "grasps the *a priori* intrinsic to the existence of self-conceptual phenomena" (1999: 283) – i.e., the structures according to which living and minded beings make themselves stand out as intelligible entities through their own activity, revealing themselves as holistic modes of existence upheld through meaning-manifesting interactions with their environments.

Thompson, 2007),[231] and can be seen as instances of the sort of phenomenological explanation we are considering here.[232]

The enactive-phenomenological rethinking of nature involves acknowledging the reality and irreducibility of the 'causes' appealed to in these kinds of explanations and naturalizing them through the notion of adaptive autonomy. With this notion, formal and final causes are construed as global-level organizing patterns of the natural processes that make up minded and living beings' bodily existence. Indeed, the resources offered by dynamical systems theory, which play a significant role in enactivists' articulation of the idea of adaptive autonomy, are well-known for making it possible to make mathematical sense of systems displaying these kinds of causality (Juarrero, 1999). The picture that emerges here, then, is that of a nature composed of irreducible, intrinsically meaningful structures – a "universe of form," as Merleau-Ponty would say (1963: 133) – primarily disclosed as such *in* the field of experience and grounded in physical nature by way of holistic models from biology and mathematics.

The dialectical 'authority' of phenomenology

We are now in position to consider the objection concerning the alleged illegitimate authority phenomenology is granted in the enactivist rethinking of nature. Above we have seen that phenomenological and scientific approaches to life and mind are not aimed at two strictly separate domains of inquiry, but rather at integrated aspects of the same phenomena: Phenomenology explicates meaning-constitutive structures and 'causes' that define the manifestation of living and minded beings as such, and scientific perspectives provide accounts of various features and processes that are involved in and serve to uphold the phenomena in question, which in turn have potential consequences for the phenomenological accounts. This enables us to see the relationship between phenomenology and science as that of a hermeneutical circulation, a developing understanding of a phenomenon through a back-and-forth movement between perspectives on its partial and holistic aspects.[233] The enactive-

[231] This so-called 'Jonasian turn' has been the source of some controversy, with some arguing that the ascription of purposiveness to non-human life is a case of a naturalistically unjustified anthropomorphism (Villalobos and Ward, 2017). Though I won't engage explicitly in that debate here, I think my project in this article has the potential to fend off at least some of the criticism. See Hverven and Netland (2021) for a clarification and defense of Hans Jonas' case for immanent teleology in non-human organisms.

[232] The idea that explanations in biology requires appeals to 'causes' beyond mechanistic/efficient causality is also convincingly advocated by John Dupré (1993; 2013).

[233] This connection to hermeneutics is well established in the enactive approach. In fact, as Thompson (2007: 444n9) notes, Varela first used the name 'the hermeneutic approach' for what later became 'the enactive approach'. The editors of *Enaction: Toward a New Paradigm for Cognitive Science* also

phenomenological concept of nature, on this view, is not decided from an external metaphysical position, but is rather something that arises from *within* this dialectical development.

This picture clearly grants phenomenology some form of authority over scientific accounts of mind and life: it is posited as proposing a way of understanding mind and life that is required in order to make proper sense of what these phenomena *are*. This involves, as we've seen, reasons for adopting a non-objectivist concept of nature where subjectivity is recognized as an irreducible and relational meaning-constitutive structure of existence. Arguing that irreducible and constitutive features of life and mind are revealed in their manifestation as meaningful, holistic phenomena, the phenomenological perspective *constrains* our understanding of these phenomena by rejecting the possibility of reducing them to scientific accounts that, from this perspective, only capture aspects of the phenomena in question.[234] That is, the claim is not that phenomenology can decide on the specific content of 'subpersonal' accounts of mentality, but that it sketches the contours of the context needed for making proper sense of such phenomena.

One could say that this authority is wielded from a place 'external to' science, in the sense that phenomenology brings with it concepts and perspectives that are not necessarily explicit components of any actual scientific practice, and which tend not to be directly testable by experimental means. At the same time, we have seen that the phenomenological dimension in this picture is considered an integral part of scientific perspectives, insofar as they presuppose an experiential manifestation of the phenomena they are studying. Phenomenology has in turn been shown to require a de-centered and pluralistic approach that includes third-personal and scientific perspectives, construing it as a project that ought to be sensitive to what goes on in the sciences. On this view, scientific research can discover new phenomena, or new aspects of phenomena, the phenomenological illumination of which can lead to new phenomenological insights, or enrichments or modifications of previous insights. After all, new theories and discoveries mean new experiences, and one can't uncover the meaningful

---

speak of the relation between phenomenology and science envisioned by enactivism as one of "*hermeneutical circulation"* (Stewart et al., 2010: x).

[234] Michael Roberts has proposed that this kind of constraint be conceived as what he calls a "structural resemblance constraint," which says that a scientific explanation of a conscious process "should reveal a strong *structural resemblance* between (a) the combined constituent parts and relations that it invokes and (b) [the process] as it is best characterised phenomenologically" (2018: 380; orig. emphasis). I take his proposal to be largely compatible with what I'm arguing here, though my attempts to blur the personal-subpersonal and description-explanation distinctions might, if successful, make it more apt to talk of a structural *coherence of perspectives* rather than a *resemblance of levels*, which implies an initial separation of the two.

constitution of a phenomenon prior to its experiential manifestation. Thus, to the extent that phenomenology clarifies and critiques the delineation of phenomena presupposed by the sciences, it is required to actually develop in tandem with science, exploring the phenomenological implications of theories and results as they arise. In this way, it is also possible to see phenomenology as *internal to scientific practice*, in the sense that it operates from within experiences that underlie and are generated by scientific developments.

Indeed, enactivism's rethinking of nature is only possible on the basis of certain scientific developments, in particular those represented by the theory of adaptive autonomy and dynamical systems theory. Phenomenology, that is, might have independent reasons for resisting objectivism and reductionism, but it is not by itself capable of providing positive scientific content to alternative views of nature. It is first upon contact with scientific resources offering the possibility of such an alternative that phenomenology can interpret itself as part of the enactive project of rethinking nature. These resources, moreover, have been developed through science-internal practices, and not as attempts to satisfy the requirements of a pure philosophy. That said, it is not unreasonable to see these developments as driven, at least in part and perhaps implicitly, by problems that are 'phenomenological' in nature in the sense that they aim to capture the holistic ways in which mind and life actually manifest in our experiences.

If we see the phenomenological perspective as implicitly engrained in the scientists' experiences in this way, rather than as a detached metaphysics, then we might have reason to dispute Sachs' claim that "we should not prefer dynamical systems theory over other ontologies of nature *because* it is consistent with embodied phenomenology" (2018: 232; orig. emphasis). Of course, if future developments in, e.g., biology or mathematics lead to the "eminently well-supported" (Vázquez and Wheeler, 2018: 150) conclusion that the notion of adaptive autonomy somehow rests on faulty premises or is unable to do the job it is supposed to, or there emerged an alternative scientific model that indisputably made a *more* valuable difference to the field, then consistency with phenomenological philosophy would not be sufficient reason for holding on to it. Insofar as this has not yet happened, however, consistency with phenomenology – in the sense of being able to do justice to the irreducible, relational, meaning-constitutive structures of experience – surely seems to be a relevant reason for preferring enactivism's dynamical systems ontology over competing views, all other things being equal.

12.7 Conclusion

I began this article by asking about phenomenology's role in the enactive concept of nature, and how it is justified. Through discussions of Godfrey-Smith's idea of philosophy of nature, phenomenological arguments against objectivism, and some of the naturalistic objections to Gallagher's article, I hope to have provided some more clarity to this issue.

What we see in the enactive-phenomenological rethinking of nature, then, is not an independent philosophy claiming the role of 'ontological dictator' over science, but rather precisely an ongoing *mutual illumination* of perspectives. Enactivists rightly see this as amounting simultaneously to a *phenomenologization* of nature as well as a *naturalization* of phenomenology. From one side, nature is phenomenologized by acknowledging the irreducible and transcendental status of experience within our concept of nature, seeing nature as composed of experientially manifest, meaning-constitutive structures that can be explicated phenomenologically. From the other side, phenomenology is naturalized by interpreting the structures it explicates as organizations of bodily and natural processes available to a range of scientific perspectives. The enactive concept of nature is achieved not by giving one of these approaches ultimate authority over the other, but by engaging in what we in section 2 saw Thompson call a "mixed discourse" (2007: 359), making the various perspectives interact as though they were, in Varela's words, "partners in a dance" (1999: 267). As the dance metaphor highlights, this is a dynamic and ongoing project, something that can only be seen "in action" (ibid.). In this way, it is possible to see the enactive-phenomenological rethinking of nature as based on a version of the practice-centered view described by Vázquez and Wheeler. And, if what I've argued above is correct, enactivism's circulation of phenomenological and scientific perspectives certainly makes a valuable difference to our understanding of mind and life, demonstrating, *through hermeneutic practice*, the virtues of the enactive-phenomenological concept of nature – or, perhaps more precisely, making the enactive-phenomenological concept of nature *emerge through* this practice.

Bibliography

Belt, J. (2020). Phenomenological Skepticism Reconsidered: A Husserlian Answer to Dennett's Challenge. *Frontiers in Psychology, 11*.

Braddock, G. (2001). Beyond Reflection in Naturalized Phenomenology. *Journal of Consciousness Studies, 8*(11): 3-16.

Chalmers, D. (1996). *The Conscious Mind.* Oxford: Oxford University Press.

Cosmelli, D., David, O., Lachaux, J.-P., Martinerie, J., Garnero, L., Renault, B., & Varela, F. (2004). Waves of consciousness: ongoing cortical patterns during binocular rivalry. *Neuroimage, 23*: 128-140.

Di Paolo, E. A. (2005). Autopoiesis, Adaptivity, Teleology, Agency. *Phenomenology and the Cognitive Sciences, 4*: 429-452.

Di Paolo, E. A. (2018). The Enactive Conception of Life. In A. Newen, L. De Bruin, & S. Gallagher (Eds.), *The Oxford Handbook of 4E Cognition* (pp. 71-94). Oxford: Oxford University Press.

Di Paolo, E. A., Buhrmann, T., & Barandiaran, X. E. (2017). *Sensorimotor Life.* Oxford: Oxford University Press.

Di Paolo, E. A., Cuffari, E. C., & De Jaegher, H. (2018). *Linguistic Bodies: The continuity between life and language.* Cambridge: MIT Press.

Di Paolo, E. A., Thompson, E., & Beer, R. D. (2021). Laying down a forking path: Incompatibilities between enaction and the free energy principle. *PsyArXiv Preprints*. Retrieved from https://psyarxiv.com/d9v8f

Di Paolo, E., & Thompson, E. (2014). The enactive approach. In L. Shapiro (Ed.), *The Routledge handbook of embodied cognition* (pp. 68-78). Oxfordshire: Routledge/Taylor & Francis Group.

Dupré, J. (1993). *The Disorder of Things: Metaphysical Foundations of the Disunity of Science.* Cambridge: Harvard University Press.

Dupré, J. (2013). Living causes. *Aristotelian Society Supplementary Volume, 87*: 19-37.

Friston, K. (2010). The free-energy principle: a unified brain theory? *Nature Reviews Neuroscience, 11*: 127-138.

Fuchs, T. (2022). Understanding as explaining: how motives can become causes. *Phenomenology and the Cognitive Sciences*.

Gallagher, S. (1997). Mutual Enlightenment: Recent phenomenology in cognitive science. *Journal of Consciousness Studies, 4*(3): 195-214.

Gallagher, S. (2003). Phenomenology and experimental design: toward a phenomenologically enlightened experimental science. *Journal of Consciousness Studies, 10*(9-10): 85-99.

Gallagher, S. (2017). *Enactivist Interventions: Rethinking the Mind.* Oxford: Oxford University Press.

Gallagher, S. (2018a). Rethinking Nature: Phenomenology and a Non-reductionist Cognitive Science. *Australasian Philosophical Review, 2*: 125-137.

Gallagher, S. (2018b). Rethinking Again. *Australasian Philosophical Review, 2*(2): 234-245.

Gardner, S. (2015). Merleau-Ponty's Transcendental Theory of Perception. In S. Gardner, & M. Gist, *The Transcendental Turn.* Oxford: Oxford University Press.

Godfrey-Smith: (2001). On the Status and Explanatory Structure of Developmental Systems Theory. In P. E. Griffiths, & R. D. Gray (Eds.), *Cycles of Contingency: Developmental Systems and Evolution* (pp. 283-298). Cambridge: MIT Press.

Heidegger, M. (1996). *Being and Time: A Translation of Sein und Zeit.* (J. Stambaugh, Trans.) Albany: State University of New York Press.

Hohwy, J. (2013). *The Predictive Mind.* Oxford: Oxford University Press.

Hohwy, J. (2018). Phenomenology and Cognitive Science: Don't Fear the Reductionist Bogey-man. *Australasian Philosophical Review, 2*(2): 138-144.

Hverven, S., & Netland, T. (2021). Projection or encounter? Investigating Hans Jonas' case for natural teleology. *Phenomenology and the Cognitive Sciences*.

Jackson, F. (1986). What Mary Didn't Know. *The Journal of Philosophy, 83*(5): 291-295.

Juarrero, A. (1999). *Dynamics in Action: Intentional Behavior as a Complex System.* Cambridge: The MIT Press.

Kelso, S. (1995). *Dynamic Patterns: The Self-Organization of Brain and Behavior.* Cambridge: The MIT Press.

Kim, J. (1999). Making sense of emergence. *Philosophical studies, 95*: 3-36.

Laughlin, C., d'Aquili, E., & McManus, J. (1990). *Brain, Symbol and Experience: Toward a Neurophenomenology of Consciousness.* New York: Columbia University Press.

Le Van Quyen, M., & Petitmengin, C. (2002). Neuronal dynamics and conscious experience: an example of reciprocal causation before epileptic seizures. *Phenomenology and the cognitive sciences, 1*: 169-180.

Lutz, A., Lachaux, J.-P., Martinerie, J., & Varela, F. (2002). Guiding the study of brain dynamics by using first-person data: synchrony patterns correlate with ongoing conscious states during a simple visual task. *Proceedings of the National Academy of Sciences USA, 99*: 1586-1591.

Marbach, E. (1993). *Mental Representation and Consciousness: Towards a Phenomenological Theory of Representation and Reference.* Dordrecht: Kluwer Academic Publishing.

Maturana, H. R., & Varela, F. J. (1980). *Autopoiesis and Cognition: The Realization of the Living.* Boston: D. Reidel.

Merleau-Ponty, M. (1963). *The Structure of Behavior.* Pittsburgh: Duquesne University Press.

Merleau-Ponty, M. (1964). Phenomenology and the Sciences of Man. In M. Merleau-Ponty, & J. M. Edie (Ed.), *The Primacy of Perception: And Other Essays on Phenomenological Psychology, the Philosophy of Art, History and Politics* (J. Wild, Trans.: 43-95). Evanston: Northwestern University Press.

Merleau-Ponty, M. (2010). *Child Psychology and Pedagogy: The Sorbonne Lectures 1949-1952.* (T. Welsh, Trans.) Evanston: Northwestern University Press.

Merleau-Ponty, M. (2012). *Phenomenology of Perception.* New York: Routledge.

Meyer, R., & Brancazio, N. (2022). Putting down the revolt: Enactivism as a philosophy of nature. *Frontiers in Psychology, 13*(948733): 1-12.

Morris, D. (1999). The Fold and The Body Schema in Merleau-Ponty and Dynamic Systems Theory. *Chiasmi International: Trilingual Studies Concerning Merleau-Ponty's Thought, 1*: 275-286.

Nagel, T. (1974). What is it like to be a bat? *The Philosophical Review, 83*(4): 435-450.

Netland, T. (2020). The living transcendental: an integrationist view of naturalized phenomenology. *Frontiers in Psychology, 11*. doi:https://doi.org/10.3389/fpsyg.2020.01548

Noë, A. (2007). The critique of pure phenomenology. *Phenomenology and the cognitive sciences, 6*: 231-245.

Petitmengin, C. (2006). Describing one's subjective experience in the second person: An interview method for the science of consciousness. *Phenomenology and the cognitive sciences, 5*: 229-269.

Petitmengin, C., Navarro, V., & Le Van Quyen, M. (2007). Anticipating seizure: pre-reflective experience at the center of neurophenomenology. *Consciousness and Cognition, 16*(3): 746-764.

Petitmengin, C., Van Beek, M., Bitbol, M., Nissou, J.-M., & Roepstorff, A. (2017). What is it like to meditate? Methods and issues for a micro-phenomenological description of meditative experience. *Journal of Consciousness Studies, 24*(5-6): 170-198.

Petitot, J. (1999). Morphological Eidetics for a Phenomenology of Perception. In J. Petitot, F. J. Varela, B. Pachoud, & J.-M. Roy (Eds.), *Naturalizing Phenomenology: Issues in Contemporary Phenomenology and Cognitive Science* (pp. 330-371). Stanford: Stanford University Press.

Petitot, J., Varela, F. J., Pachoud, B., & Roy, J.-M. (Eds.). (1999). *Naturalizing Phenomenology: Issues in Contemporary Phenomenology and Cognitive Science.* Stanford: Stanford University Press.

Pollard, C. (2014). Merleau-Ponty and Embodied Cognitive Science. *Discipline Filosofiche, 24*(2): 67-90.

Ramstead, M. J. (2015). Naturalizing what? Varieties of naturalism and transcendental phenomenology. *Phenomenology and the cognitive sciences, 14*: 929-971.

Reynolds, J. (2018). *Phenomenology, Naturalism and Science: A Hybrid and Heretical Proposal.* New York: Routledge.

Reynolds, J. (2020). Embodiment and Emergence: Navigating an Epistemic and Metaphysical Dilemma. *Journal of Transcendental Philosophy, 1*(1): 135-159.

Reynolds, J. (2022). Phenomenology, abduction, and argument: avoiding an ostrich epistemology. *Phenomenology and the Cognitive Sciences*.

Reynolds, J., & Sebold, R. (Eds.). (2016). *Phenomenology and Science: Confrontations and Convergences.* New York: Palgrave Macmillan.

Roberts, M. (2018). Phenomenological constraints: a problem for radical enactivism. *Phenomenology and the Cognitive Sciences, 17*(2): 375-399.

Sachs, C. B. (2018). The Role of Non-reductive Naturalism: Cognitive Science or Phenomenology? *Australasian Philosophical Review, 2*(2): 229-233.

Sass, L. A. (2010). Phenomenology as description and as explanation: The case of schizophrenia. In D. Schmicking, & S. Gallagher (Eds.), *Handbook of phenomenology and cognitive science* (pp. 635-654). Springer.

Sass, L. A. (2014). Explanation and description in phenomenological psychopathology. *Journal of Psychopathology, 20*: 366-376.

Schmicking, D., & Gallagher, S. (Eds.). (2010). *Handbook of Phenomenology and Cognitive Science.* Dordrecht: Springer.

Stendera, M. (2022). Explanation, Enaction and Naturalised Phenomenology. *Phenomenology and the Cognitive Sciences*.

Stewart, J. (2010). Foundational Issues in Enaction as a Paradigm for Cognitive Science. In J. Stewart, O. Gapenne, & E. A. Di Paolo (Eds.), *Enaction: Toward a New Paradigm for Cognitive Science* (pp. 1-32). Cambridge: The MIT Press.

Stewart, J., Gapenne, O., & Di Paolo, E. A. (Eds.). (2010). *Enaction: Toward a New Paradigm for Cognitive Science.* Cambridge: The MIT Press.

Thompson, E. (2007). *Mind in Life: Biology, Phenomenology, and the Sciences of Mind.* Cambridge: Harvard University Press.

Thompson, E., & Varela, F. (2001). Radical embodiment: neural dynamics and consciousness. *Trends in Cognitive Sciences, 5*: 418-425.

Varela, F. J. (1996). Neurophenomenology: A methodological remedy for the hard problem. *Journal of Consciousness Studies, 4*: 330-49.

Varela, F. J. (1999). The Specious Present: A Neurophenomenology of Time Consciousness. In J. Petitot, F. J. Varela, & B. R.-M. Pachoud (Eds.), *Naturalizing Phenomenology* (pp. 266-314). Stanford: Stanford University Press.

Varela, F. J., & Depraz, N. (2005). At the Source of Time: Valence and the constitutional dynamics of affect. *Journal of Consciousness Studies, 12*(8-10): 61-81.

Varela, F. J., Thompson, E., & Rosch, E. (1991). *The Embodied Mind: Cognitive Science and Human Experience.* Cambridge: MIT Press.

Vázquez, M. J., & Wheeler, M. (2018). Minding Nature: Gallagher and the Relevance of Phenomenology to Cognitive Science. *Australasian Philosophical Review, 2*(2): 145-158.

Villalobos, M., & Ward, D. (2016). Lived experience and cognitive science: Reappraising enactivism's Jonasian turn. *Constructivist Foundations, 11*: 204-233.

Vörös, S., Froese, T., & Riegler, A. (2016). Epistemological Odyssey: Introduction to Special Issue on the Diversity of Enactivism and Neurophenomenology. *Constructivist Foundations, 11*(2): 189-203.

Weber, A., & Varela, F. J. (2002). Life after Kant: Natural purposes and the autopoietic foundations of biological individuality. *Phenomenology and the Cognitive Sciences*: 97-125.

Wheeler, M. (2013). Science Friction: Phenomenology, Naturalism and Cognitive Science. *Royal Institute of Philosophy Supplement, 72*: 135-167.

Zahavi, D. (2004). Phenomenology and the project of naturalization. *Phenomenology and the Cognitive Sciences*(3): 331-347.

Zahavi, D. (2013). Naturalized Phenomenology: A Desideratum or a Category Mistake? *Royal Institute of Philosophy Supplement*(27): 23-42.

Zahavi, D. (2018). Brain, Mind, World: Predictive Coding, Neo-Kantianism, and Transcendental Idealism. *Husserl Studies, 34*: 47-61.

Zahavi, D. (2019). The practice of phenomenology: The case of Max van Manen. *Nursing Philosophy, 21*(2).

ISBN 978-82-326-7204-2 (printed ver.)
ISBN 978-82-326-7203-5 (electronic ver.)
ISSN 1503-8181 (printed ver.)
ISSN 2703-8084 (online ver.)

NTNU
Norwegian University of
Science and Technology