

Overcoming the Disunity of Understanding

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Abstract

I argue that embodied understanding and conceptual-representational understanding interact through schematic structure. I demonstrate that common conceptions of these two kinds of understanding, such as developed by Wheeler (2005, 2008) and Dreyfus (2007a, b, 2013), entail a separation between them that gives rise to significant problems. Notably, it becomes unclear how they could interact; a problem that has been pointed out by Dreyfus (2007a, b, 2013) and McDowell (2007) in particular. I propose a Kantian strategy to close the gap between them. I argue that embodied and conceptual-representational understanding are governed by schemata. Since they are governed by schemata, they can interact through a structure that they have in common. Finally, I spell out two different ways to conceive of the schematic interaction between them—a close, grounding relationship and a looser relationship that allows for a minimal interaction, but preserves the autonomy of both forms of understanding.

Keywords: Embodied Understanding, Conceptual-Representational Understanding, Embodied Cognition, Kant, Heidegger, Schemata

1. Introduction

Proponents of Embodied Cognition as well as contemporary Phenomenologists usually separate between embodied understanding on the one hand and conceptual-representational understanding on the other hand (Wheeler 2005; Dreyfus 2007a, b, 2013; Chemero 2009; Hutto and Myin 2013). Whereas embodied understanding is supposed to

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constitute what we can call a practically-engaged mode of dealing with the world, conceptual-representational understanding is supposed to constitute what we can call a theoretically-detached mode of thinking (§2).¹

The separation between these kinds of understanding is strict. This is apparent from how embodied and conceptual-representational understanding are characterized. Whereas embodied understanding is supposed to be governed by embodied and sensorimotor abilities, conceptual-representational understanding is linguistic or symbolic. Embodied understanding is context-sensitive, action-oriented and pragmatic; conceptual-representational understanding is general, abstract and disembodied. Accordingly, it seems as if the separation renders these kinds of understanding as *autonomous* and *structurally unrelated* to each other (§2.1).

I argue in §2.2 that we receive a segmented conception of the mind, in which two autonomous kinds of understanding pull the embodied agent into different directions, if we cannot account for the relationship between these two kinds of understanding. Given such a segmented conception of the mind, it is unclear how conceptual thought can relate to embodied understanding, as is the case when we report an action or make a judgment about a perceived situation (Dreyfus 2007a, b; McDowell 2007). Similarly, if conceptual-representational understanding is not structurally connected to embodied understanding, which is the ground of concerned interactions with the world, it is mysterious how conceptual-representational understanding exhibits practical meaning and significance (Heidegger 1962; Dreyfus 1991). Even though the problem of a segmented mind has been addressed by Dreyfus (2007a, b) and McDowell (1994, 2007), we are left without a sufficient account to overcome it. Dreyfus (2007a) admits that he has no explanation of the relationship between these two kinds of understanding (§2.1), and McDowell's (1994, 2007) account is unacceptably intellectualist (§3.1).

In §3 I propose the following positive solution to overcome the separation. Like McDowell, I draw on Kant to do so. Yet, unlike McDowell, I refer to Kant's thoughts on spatiotemporal schemata. For Kant, the basic structure of

experience is that of spatiality and temporality. Kant connects conceptual thought with experience, by arguing that concepts are governed by schemata that determine the possible spatial and temporal forms that objects of experience can have. For instance, the schema of the concept of dog determines all possible forms that dogs can have in space and time and thereby allows the concept to be about the experience of things in space and time. Conceptual thought and experience are able to interact, since both exhibit a common structure: spatiality and temporality (§3.1).

I argue in §3.2 that spatiotemporal schemata govern both—embodied and conceptual-representational understanding. Schemata can be conceived of as ontologically and cognitively modest. They are ontologically modest, because most objects of the understanding can be minimally characterized by their spatial and temporal properties. They are cognitively modest, because understanding has to be minimally responsive to the spatial and temporal structure of the world surrounding us; i.e. the spatiotemporal world that contains objects and situations about which embodied and conceptual-representational understanding are.

If both kinds of understanding exhibit at a basic level spatiotemporally schematic structure, this schematic ground allows for a structural connection between both of them. In §4 I describe two ways to conceive of this structural connection. We can conceive of it, first, as a grounding relationship, where embodied understanding grounds conceptual-representational understanding (§4.1). Or we can conceive of it, second, as a looser relationship, where schemata allow for “cross-talk” between the two kinds of understanding, yet where the autonomy of each is preserved to a certain degree (§4.2).

2. The separation between embodied and conceptual-representational understanding

In contemporary philosophy, a distinction is frequently made between two kinds of understanding—embodied understanding and conceptual-representational understanding. These two kinds of understanding are supposed to roughly correspond to two ways of engaging with the world that we can

call ‘practically-engaged’ and ‘theoretically-detached’. In the following I discuss how these distinctions are drawn, what motivates them and which problems they entail.

Let us first focus on the phenomenologically inspired work of Michael Wheeler (2005, 2008) and Hubert Dreyfus (2007a, 2007b, 2013). Both differentiate between different modes of engagement based on phenomenological analyses that are inspired by Martin Heidegger’s (1962) and Maurice Merleau-Ponty’s (2012) work. The first mode of engagement that Dreyfus and Wheeler identify is reflective of our experience of most of our interactions with the world. They call it in accord with Heidegger and Merleau-Ponty ‘readiness-to-hand’ or ‘smooth coping’ respectively. It is characterized by environmentally immersed, non-reflective and contextual action.

This mode of engagement exhibits no experienced distinction between subject and object and is structured by the body. As Wheeler states:

(...) smooth coping in the domain of the ready-to-hand has a non-representational phenomenology. Smooth coping involves a form of awareness in which there are no subjects and no objects, only the experience of the ongoing task (e.g. typing). (Wheeler 2008, 338)

For instance, if I hammer a nail, I am engaging in a skillful activity in which my awareness of myself is lost in the activity. I am often not only not aware of myself in these engagements, I am also not aware of operating on determinate objects with *decontextualized* properties. To the contrary, I focus on the activity that is directed towards the end result of my action and the work that is to be achieved. As Heidegger states:

That with which our everyday dealings proximally dwell is not the tools themselves [die Werkzeuge selbst]. On the contrary, that with which we concern ourselves primarily is the work—that which is to be produced at the time; and this is accordingly ready-to-hand too. (Heidegger 1962, 99)

In this mode of engagement, readiness-to-hand, things show up to me only as things-for-the-sake-of-the-work that I seek to achieve. In our case, hammer and nail show up *contextually* as things with which I, for instance, hang up a picture.

Dreyfus and Wheeler distinguish this mode of engagement, from deliberative, reflective, decontextualized and

detached modes of engagement. We are involved in these detached modes of engagement, for instance, when we encounter practical problems, reason or do science. Both authors identify these modes of engagement with what Heidegger (1962) called ‘un-readiness-to-hand’ and ‘presence-at-hand’. In the former, we are disturbed in our smooth coping and search for solutions to the problems that caused the disturbance. In the latter, we take an observer stance towards the world and conceive of it in terms of objects with *decontextualized* properties.

In both of these cases, a ‘cognitive distance’ is introduced between subject and object which is not present in skillful coping (Wheeler 2008, 383). This introduction of an experiential distinction between object and subject seems to entail for Dreyfus and Wheeler that we conceive of objects in detached modes of engagement in a literally ‘objective’ way. As Wheeler states:

When revealed as present-at-hand (e.g. by detached theoretical reflection) an entity will be experienced in terms of properties that are action-neutral, specifiable without essential reference to the representing agent, and context-independent. Moreover, according to Heidegger, this group of properties will also characterize the *contents of the agent’s related representational states*. (Wheeler 2008, 339, emphasis added)

Wheeler and Dreyfus argue that readiness-to-hand is governed by embodied understanding and that un-readiness-to-hand and presence-at-hand are governed by (action-oriented or classical) representations (Wheeler) or linguistic concepts (Dreyfus), which exhibit the characteristics of ‘conceptual content, mindedness, and rationality’ (Dreyfus 2013, 29). The assumption here is that embodied understanding enables engaged-practical modes of engagement with the world and that conceptual-representational understanding enables theoretical-detached modes of engagement with the world, in particular, decontextualized, body-neutral conceptual content.

We find similar claims about different modes of engagement and corresponding differences in the underlying kinds of understanding in other embodied conceptions of understanding. For instance, various authors argue for the

existence of something like a pre-conceptual background that characterizes most of our engagements with the world. This background is conceived of as a holistic and contextual background structure that allows us to act and interact with our living world. This pre-conceptual background is then contrasted with explicit concept use (Dreyfus 2007a, 2007b, Wheeler 2008; Hutto 2012; Dreyfus and Taylor 2015).

Another similar separation is made in Radical Embodied Cognitive Science and closely related versions of Enactivism (Chemero 2009; Kiverstein and Rietveld 2015). One central concept of this project is 'affordance' which is defined by Chemero (2009) as a relation between agents and environments and, in accord with J.J. Gibson, as the embodied, pragmatic meaning of objects. In this sense, affordances grant an understanding of objects for engaged-practical purposes. The explanatory scope of affordances is yet unclear for Chemero (2009). In particular, he deems it an open question to what extent Radical Embodied Cognitive Science will be able to explain, what he calls in accord with Clark and Toribio (1994), 'representation hungry tasks'.

As we have seen above, many authors differentiate between different ways of relating to the world. On the one hand, we have a practical-engaged mode that pertains to action and perception. This practical-engaged mode is contextual, holistic, value-laden, body-centric and is governed by embodied understanding (Dreyfus 2007b; Wheeler 2008). On the other hand is a theoretical-detached mode, which is thought to include engaging in decontextualized, general propositional thought (Hurley 1998), distinctly cognitive intentionality (Kelly 2002), doing science, theorizing and using language (Wheeler 2005; Chemero 2009), engaging with the world in a detached, observational fashion (Dreyfus 2007b), deliberative, reflective rationality (Dreyfus 2013), judging, believing or planning (Hutto and Myin 2013), or participating in the space of reasons (Dreyfus and Taylor 2015). This detached-theoretical mode is supposedly governed by conceptual-representational understanding.

2.1. The separation is strict

Now we need to ask how strict the separation between embodied and conceptual-representational understanding is. Is

there continuity between the different kinds of understanding or are they radically separate from each other? The answers to this question differ. For instance, Hutto and Myin (2013) see no connection between the embodied abilities that generate action and perception, and contentful conceptual-representational understanding. Contrary to that, Dreyfus in particular has stressed the continuity between the two kinds of understanding. As Dreyfus claims:

Intelligence is founded on and presupposes the more basic way of coping we share with animals. (Dreyfus 2007b, 250)

Another expression of Dreyfus's commitment to the continuity between both kinds of understanding is the following.

Absorbed bodily coping, its motor intentional content, and the world's interconnected solicitations to act provide the background on the basis of which it becomes possible for the mind with its conceptual content to think about and act upon a categorially unified world. (Dreyfus 2007a, 360–361)

Importantly, Dreyfus deems conceptual-representational understanding constitutively dependent upon embodied understanding.

Similar remarks have been made recently from a Neo-Pragmatist perspective by Gallagher:

Pragmatists and neo-pragmatists would treat the intentionality of propositional attitudes as derived from a more original form of embodied intentionality, what phenomenologists like Husserl and Merleau-Ponty call “motor intentionality.” (Gallagher 2014, 121)

Further, in particular proponents of Embodied Cognition support the claim that cognition, action, and perception are integrated with each other (Thompson and Stapleton 2009) or that they are non-separable, interaction-dominant components of one dynamic system (Chemero 2014). If that is the case, i.e. if cognition, action, and perception are integrated and inseparable from each other, it should be entailed that both kinds of understanding are also integrated with each other and inseparable from each other, which again entails a strong form of continuity.

And not surprisingly, a standard response by proponents of Embodied Cognition to the question about the relationship

between these kinds of understanding is that they are ‘*somehow*’ connected and continuous with each other. But there is no concrete philosophical explanation of what the relationship between embodied and conceptual-representational understanding actually is.²

We can see this at the example of Dreyfus’s (2007a) account. As we have seen above, Dreyfus claims, with recourse to Heidegger and in particular Merleau-Ponty, that motor intentionality and other embodied abilities enable conceptual-representational understanding. Yet, Dreyfus does not provide an explanation of the relationship between the two kinds of understanding. He merely claims that they are connected with each other, without providing an analysis of how our theoretical-detached engagements with the world characteristically exhibit signs of motor intentionality or embodiment.

To the contrary, Dreyfus (2007a, 364) claims that we experience ‘context-free, self-sufficient substances with detachable properties’ when we engage with the world as theoretically-detached, which he (Dreyfus 2007a, 364) identifies with ‘McDowell’s world of facts, features and data’. However, it is not clear what it means that decontextualized, self-sufficient substances exhibit signs of embodiment or motor intentionality.

Further, Dreyfus states in another passage that ‘motor intentional content’ cannot in any “form” be “suitable to constitute the contents of conceptual capacities” (Dreyfus 2007a, 360), which seems to contradict the claims Dreyfus makes about how embodied understanding, in particular motor intentionality, is the basis of conceptual-representational understanding.³ And to further heighten the confusion, Dreyfus concludes that neither he nor Heidegger nor Merleau-Ponty would have been able to provide an account of the relationship between embodied and conceptual-representational understanding: ‘It seems that (...) the phenomenologists can’t account for what makes it possible for us to step back and observe [the world]’ (Dreyfus 2007a, 364, my brackets). Concretely, Dreyfus admits that he cannot account for the relationship between conceptual-representational understanding and embodied understanding.

2.2. Problems with the separation

The lack of an account that explains the relationship between two kinds of understanding is deeply concerning. What is in particular concerning is that the two kinds of understanding, according to how they are standardly described, seem structurally disparate—so disparate even that they are seemingly autonomous from each other. If that were the case, it is deeply mysterious how they could interact.

Yet, it is obvious that they do interact. For instance, as McDowell (2007) has repeatedly pointed out, we need to account for how our embodied experience can be the object of verbal reports and how it can inform conceptual judgments. And as Alva Noë (2004, 2012) has pointed out, our embodied understanding itself exhibits such cognitive complexity that it requires a close relationship to conceptual-representational understanding.

Further, if these kinds of understanding were separate and autonomous from each other, then it would be puzzling how human thinking and action are so synchronized in everyday behavior. If the two kinds of understanding were separately operating in an embodied agent, it would seem as if she would have to be torn in different directions, by autonomously operating kinds of understanding.

Even more, if embodied understanding is that what generates meaning and significance for an agent, as at least Phenomenologists and Phenomenologically-inspired philosophers argue (Heidegger 1962; Merleau-Ponty 2012; Thompson 2007; Ratcliffe 2008; Noë 2012), then we need to address the question how conceptual-representational understanding itself receives meaning, in particular if we do not want to accept classic Intellectualist conceptions of a disembodied intellect.⁴ Accordingly, we need to account for the relationship between embodied understanding and conceptual-representational understanding.

In what follows I seek to account for this relationship with the following strategy. First, I suggest that spatiotemporal schemata can function as the ground for an interaction between

these kinds of understanding. Second, I describe different ways to conceive of the relationship between the kinds of understanding, given that they are connected through schematic structure.

3. Bridging the separation with schematic structure

In the following I suggest that schemata are the means by which embodied understanding and conceptual-representational understanding interact. A schema, as I will argue, is an ontologically and cognitively minimal structure that preserves a certain degree of autonomy for both kinds of understanding, yet, allows for their close interaction. The following considerations draw heavily on Immanuel Kant's conception of schemata, developed in the *Critique of Pure Reason*. I will introduce the conception of a schema based on his work and show how we can make the basic idea work in different ways, without having to accept the wider ramifications of Kant's epistemological and ontological project. In order to do so, I spell out two different ways in which schemata can connect embodied and conceptual-representational understanding.

3.1. Kantian schemata

Schemata are a central, though often overlooked aspect of Kantian philosophy (Sherover 1971; Heidegger 1990; Carman 1999; Hanna 2005; van Mazijk 2016). They are the structures that explain, for Kant, how experience and conceptual thought are synthesized. In the following I will discuss schemata in the context of Kant's considerations on the synthesis of experience and conceptual thought.

As is well known, Kant insisted that concepts and experience have to interact in order to make sense of either of them. Yet it is less well known that Kant is not satisfied with claiming that concepts and experience interact or that they are synthesized. Kant is concerned with the *conditions that make it possible* that concepts and experience can interact; i.e. Kant does not merely describe the necessity of the interaction between them, but he seeks to explain it further. This means that Kant is concerned with the structure that is the ground for

the interaction between concepts and experience, and accordingly with the conditions that make it possible that concepts are *about* objects of experience.

Kant argues that there has to be a common structural ground, a ‘homogenous’ ‘third thing’, that has to be definitive of concepts and experience so that they can interact.

Now it is clear that there must *be a third thing*, which must stand in *homogeneity* [in Gleichartigkeit stehen] with the category on the one hand and the appearance on the other, and *makes possible* the application of the former to the latter. (Kant 1998, A138 / B177, emphasis and translation in original)

Kant’s point is that concepts and experience have to exhibit a structural commonality, so that they can interact; or differently put, so that each can non-arbitrarily match with each other. Kant identifies this matching structure, the ‘third thing’, with schemata.

According to Kant, schemata can perform their function as the common ground of both experience and concepts by being ‘a priori time-determinations’ (Kant 1998, A145 / B184). Whether Kant then actually conceives of them merely as ‘a priori time-determinations’, i.e. as exhibiting temporal structure, is doubtful. It seems as if schemata not only exhibit temporal structure, but also spatial structure, as we can see from his discussion of the concept of substance.

The schema of substance is the persistence of the real in time, i.e., the representation of the real as a substratum of empirical time-determination in general, which therefore endures while everything else changes. (Kant 1998, A144 / B183)

What allows for the concept of substance and the experience of a substance to interact is that both—or rather schemata in the case of concepts—have spatial and temporal structure in common. For instance, the experience of a substance is that of an entity that is a spatially stable thing that does not change in time. The schema of a substance directs the concept of substance to a substance, since it exhibits spatial and temporal structure based on which it determines an experience of *x* as a substance if *x* has spatially stable structure that does not change in time. The matching consists in the overlap of the same spatial and temporal structure of the

experience and the schema—in the case of substance: spatially stable form that does not change in time.

The same considerations apply to empirical concepts too—not only to the concepts of substance, cause, reality, and so forth—Kant’s pure concepts of the understanding. The concept of dog is governed by a schema that determines all possible spatiotemporal forms that dogs can exhibit.

The concept of a dog signifies a rule in accordance with which my imagination can specify the shape of a four-footed animal in general, without being restricted to any single particular shape that experience offers me or any possible image that I can exhibit *in concreto*. (Kant 1998, B181, 182 / A 142)

At the same time, all the possible ways in which one can experience dogs exhibit a particular spatiotemporal form, i.e. dog-form. Accordingly, my concept of dog is about dogs, and can only be about dogs in the first place, because it is connected through the schema of dog to dogs in the world, since both exhibit matching spatiotemporal form—the particular instantiation of the dog schemata_{s1-t1}-particular dog with dog form_{s1-t1}. For instance, the declarative sentence, ‘there is a dog on the mat’, is about a dog in the world because it is governed by schemata that determine the spatiotemporal forms according to which dogs can appear on mats and it can match an actual appearance of a dog on a mat in space and time.

Importantly, what is required for experience and conceptual thought to interact is that both are at the basic level characterized by spatial and temporal attributes. Experience is basically characterized by the invariant structures spatiality and temporality; in Kant’s case, the pure forms of intuition space and time. Concepts are basically characterized by the invariant structures spatiality and temporality; in Kant’s case, through spatiotemporal schemata. Since both experience and conceptual thought exhibit *the same basic structure*, spatiality and temporality, they can interact and be synthesized.

Kant is quite clear about what is entailed for conceptual understanding if we accept that it is governed by schemata. Concepts cannot constitute an arbitrary, autonomous kind of understanding, but schemata determine the scope, application and meaning of concepts.

Thus the schemata of the concepts of pure understanding are the *true and sole conditions* for providing them with a *relation to objects* [*Beziehung auf Objekte*], thus with *significance* [*Bedeutung*] (...). (Kant 1998, A145-146 / B185, emphasis and translation in original)

This is the case, since not only the aboutness relationship between conceptual thought and objects is determined by schemata, but also because that what concepts can mean is completely determined by the possible ways in which an object can appear to me in space and time.

As we can see from this, Kant's own approach is quite different from John McDowell's Kant-inspired account (McDowell 1994, 2007), according to which concepts reach into experience, without further mediation by schemata; where neither conceptual thought is constrained by schemata, nor experience is primarily characterized by spatiality and temporality.

McDowell breaks with Kant in that he does not provide an analysis of the relationship between experience and conceptual thought by means of a mediating structure, i.e. schemata. Rather, he claims that our experience is readily available for conceptual understanding without providing an account of the mediating structure that could make experience available for conceptual understanding; i.e. without an explanation of the conditions that make it possible that experience and conceptual thought can interact. As McDowell claims:

We can equip ourselves with new conceptual capacities, in that sense, by isolating and focusing on—*annexing bits of language to*—other aspects of the categorially unified content of the experience, aspects that were hitherto not within the scope of our capacities for *explicit thought*. (McDowell 2007, 347, emphasis added)

For McDowell, conceptual thought is simply linguistic and it can reach into experience qua its linguistic structure, which presupposes that the structure of experience exhibits linguistic structure too.

Yet, as I have shown above, at least for Kant, what provides experience with “categorially unified content” or the Kantian equivalent thereof, is that experience is structured by the pure forms of intuition space and time, i.e. that experience

is itself structured into objects that have a particular spatiotemporal form that differentiates them from other objects and makes them available to be the object about which a schema, and thereby a concept, can be.

Since McDowell does not account for such a mediating structure, he not only fails to provide an analysis of the conditions that make the application of concepts to experience possible. He also renders the relationship between experience as well as embodied understanding and conceptual thought intellectualist, since he argues that experience and embodied understanding exhibit conceptual structure.

3.2. Schemata as a bridging structure

Importantly, we do not have to accept the particular ontological ramifications of Kantian philosophy in order to see in schemata an attractive option for the explanation of at least a minimal interaction between embodied understanding and conceptual-representational understanding. In the following I will spell out why schemata can be considered to be an ontologically and cognitively non-demanding structure. Then I will show, that, given the ontologically and cognitively non-demanding structure of schemata, we can conceive of embodied understanding as minimally characterized by schematic structure, which gives us the ground for an interaction between the kinds of understanding. Finally, I will spell out different ways of how we can conceive of the schematic relationship between embodied understanding and conceptual-representational understanding—ranging from the strong Kantian (and Phenomenological) project, to a minimalist interaction between both kinds of understanding that explains how we can, for instance, make verbal reports about the objects of embodied understanding.

Many readers might be skeptical about accepting a Kantian conception of schemata, because they might worry that such a strategy commits them to an acceptance of wider aspects of the Kantian project that they might find not desirable. Yet, we do not have to accept other aspects of Kant's system to adopt his conception of schemata; for instance, his claim that space and time are pure forms of intuition or that there are pure

concepts of the understanding, i.e. basic categories such as substance or causality.

Indeed, the idea of a schema is ontologically modest, since it is formulated about primitive, invariant spatiotemporal properties of objects that characterize these objects in a minimal and essential fashion. There is nothing ontologically obscure about claiming that the objects of our thoughts, such as dogs, have a particular spatiotemporal form and have it essentially. There is further nothing cognitively obscure or demanding about the claim that understanding has to be responsive to the temporal and spatial aspects of the world; for instance, by exhibiting temporal structure itself. Quite to the opposite, it seems difficult to make sense of the responsiveness to a spatial world in temporal change without such a conception of schemata—for instance, based on an explanation formulated over disembodied, symbolic representations.

Since there is neither anything cognitively nor ontologically demanding about schemata, we can conceive of embodied understanding as schematic too—which is obviously a necessary condition for the interaction of the kinds of understanding through schemata.

I do not purport that I can present an exhaustive argument for the claim that embodied understanding is governed by schematic structure. I merely want to show here that it is a plausible option to conceive of embodied understanding as itself spatiotemporally schematic.

If I bring my embodied understanding to bear on an action, for instance, the action of making coffee, I need to have a practical understanding of the behaviors and objects involved in the action. This embodied understanding is itself characterized by an *aboutness* relation, as in particular Merleau-Ponty (2012) has argued, that is neither cognitive nor merely causal, i.e. a motor intentional aboutness relationship (Carman 1999; Kelly 2002).

This intentional relationship is characterized by an interaction of motor abilities (e.g. embodied abilities) of an agent and spatiotemporal objects. As is well known, Merleau-Ponty conceives of the spatiotemporal nature of objects as determined through a body schematic relationship. As Merleau-

Ponty (2012, 103) states, “each figure appears perspectively against the double horizon of external space and bodily space.” Independent of how we conceive of this (body) schematic structure exactly, whether it is determined through embodiment (Merleau-Ponty) or without embodiment (Kant), it is essentially of a spatiotemporal nature, as the following example illustrates.

Take for instance the action of coffee making—a simple, cognitively non-demanding action governed by embodied understanding. In order to make coffee, I need to understand, non-deliberatively and non-thematically, among many other things, what a coffee machine does and I need to understand how to behave towards it, i.e. I have to understand non-conceptually which buttons I have to press, where I have to insert the coffee, when I have to stop inserting it and so forth.

This means, my understanding of which action I have to perform is relative to my understanding of which objects are involved in the action (coffee machine, coffee ground, kitchen cabinet, etc.). And my understanding has to be about these objects—in order to identify a coffee machine as a coffee machine, i.e. as something that in this situation produces coffee for me. What allows for the application of my embodied understanding to objects is schematic structure.

The most basic, invariant features of a coffee machine are its spatiotemporal properties. I do not have to be aware of them as such, yet they nevertheless allow me to see a particular physical configuration in space and time as a coffee machine. My understanding of the coffee machine itself is not primarily spatiotemporal. It is about what I can do with the coffee machine and how it can fulfill my concerns. But a spatiotemporal schema allows me to pick out an otherwise insignificant object out of space and time as a thing of which I have a particular concern-fulfilling and action-oriented understanding.

Similarly, the structure of my behavior is guided by a spatiotemporal schema in relation to objects. As Stanley and Krakauer (2013) and Stanley and Williamson (2016) have pointed out, action is governed by an understanding of initiation conditions. This means, I need to understand, in

relation to an environmental situation, when I have to initiate or change my course of behavior in order to produce a result I have concern for. For instance, if I open the lid of my coffee machine I need to understand when to start pouring ground coffee into the filter of the machine and when to stop.

Krakauer, Stanley and Williamson argue that this understanding of initiation conditions is housed in mental representations that correspond to facts. Yet, we can equally conceive of this understanding as governed by spatiotemporal schemata. The schema cannot only specify which objects are involved in an action, but it has further an intimate connection to temporality itself, which is necessary to determine stop and initiation conditions of an action.

Now that we see that we can conceive of embodied understanding as spatiotemporally schematic too, we can analyze the possible relationships that can hold between embodied understanding and conceptual-representational understanding, based on their schematic structure.

4. Different interactions: ways to connect both kinds of understanding

In the following I discuss two different ways we can conceive of the schematic relationship between embodied understanding and conceptual-representational understanding. First, a tight relationship, that grounds conceptual-representational understanding in embodied understanding through schemata. Second, a loose relationship, that grants autonomy to both kinds of understanding, yet, lets them interact at various levels through schemata. I cannot spell out the specifics of such a relationship in this paper. Rather, I merely describe which kinds of relationship can in principle follow from the structural connection between the two kinds of understanding that is grounded in schematic structure. The details of such a relationship will have to await further, more detailed deliberations.

4.1. Grounding conceptual-representational understanding in embodied understanding

We can conceive of the relationship between embodied and conceptual-representational understanding, as Kant conceived of the relationship between experience and conceptual thought. In that case, embodied understanding, as that which contributes to our structure of experience or is at least closely connected to it (O'Regan and Noë 2001; Noë 2004; Thompson 2007), is that which governs conceptual-representational understanding insofar as it bestows meaning and significance to it. Accordingly, we can conceive of the relationship between the two kinds of understanding as a grounding relationship.

Conceiving of the relationship as a close one could be interesting for any author that follows Heidegger (1962) in arguing that the meaning of thought or linguistic expressions requires a grounding in our practical understanding of the world, that itself is grounded in concern or sensorimotor skill.

For instance, my concept of a coffee machine receives significance through the significance that coffee machines have for me based on the ways I can relate to them based on my embodied understanding of them. This grounding relation allows then that concepts have pragmatic meaning.

4.2. Preserving autonomy through minimal interaction

If we want to grant conceptual-representational understanding a high degree of autonomy and argue for a marked difference between the modes of engagement realized by embodied and conceptual-representational understanding respectively (Wheeler 2005; Dreyfus 2007a), we can obviously also conceive of the relationship between both kinds of understanding in a weaker form; yet still schematically mediated.

If both, embodied understanding and conceptual-representational understanding are exhibiting schematic structure, both kinds of understanding can be elicited or exerted in the same situation. If I make coffee, my

spatiotemporally schematic understanding of the situation not only allows me to bring my embodied understanding to bear on the situation, but through a similar or the same schema, my concept of, say, “coffee machine” can be elicited too. This allows then to make verbal reports about the situation at hand and it allows to form conceptual judgments such as “I am making coffee”—an action that is otherwise governed by embodied understanding.⁵

5. Conclusion

I have argued that spatiotemporal schemata are the condition that make it possible that embodied understanding and conceptual-representational understanding can interact. I have shown that the separation that is made between both kinds of understanding by contemporary Phenomenologists (Dreyfus 2007a, b) and proponents of Embodied Cognition (Wheeler 2005, 2008; Chemero 2009) renders the interaction between them puzzling. Concretely, I have argued, in accord with McDowell (1994, 2007), Dreyfus (2007a) and Noë (2004, 2012), that the separation between these kinds of understanding cannot account for how we can produce reports about our actions that are governed by embodied understanding, or how we can make judgments about them. Further, I have argued that the separation can further not account for the seeming interaction between both kinds of understanding in everyday action and, at least from a phenomenological point of view, for how conceptual-representational understanding receives meaning and significance through embodied understanding. These problems make it necessary to account for the interaction between both kinds of understanding.

I have then argued that spatiotemporal schemata are well-suited to account for this interaction. I have advanced a conception of schemata that is based on Kant’s own conception of schemata. I have argued that schemata are basic, ontologically and cognitively modest structures that relate to spatial and temporal properties of objects. I then suggested that schemata underlie both, embodied as well as conceptual-representational understanding. If that is the case, both,

embodied and conceptual-representational understanding have the same basic structure in common that allows for their interaction.

Finally, I have spelled out two different ways in which the two kinds of understanding could interact through schemata. I have described a close interaction relationship, in which conceptual-representational understanding is grounded in embodied understanding—an idea valuable for Phenomenologists and philosophers who conceive of embodied understanding as the primary locus of meaning and significance. I have further depicted another way to conceive of the relationship as a looser one in which both kinds of understanding minimally interact—so that we are able to make reports about our actions or to transform our thoughts into actions—yet, where embodied understanding and conceptual-representational understanding are in many ways autonomous from each other and preserve their unique properties and functions.

NOTES

¹The exception to the rule is Alva Noë (2004, 2012) who has rejected the separation as intellectualist.

²Accounts by McDowell (1994, 2007) and Noë (2004, 2012) are the exceptions to this explanatory shortcoming. I discuss McDowell briefly in § 3.1. A discussion of Noë unfortunately goes beyond the scope of this paper.

³Dreyfus understandably has to make this claim, given his own theoretical presuppositions, to thwart John McDowell's (1994, 2007) claim that experience exhibits conceptuality. However, Dreyfus's claim entails unfortunately a contradiction to his own claims about the continuity between embodied and conceptual-representational understanding. 'To focus on the motor intentional content, then, is not to make some implicit conceptual content explicit—that's the myth—but rather to transform the motor intentional content into conceptual content, thereby making it available for rational analysis but no longer capable of directly motivating action' (Dreyfus 2007a, 360). Worse, Dreyfus's statement, cited in the main text, clearly cuts off embodied understanding from conceptual-representational understanding.

⁴Importantly, Heidegger, who inspires Dreyfus and Wheeler to sharply separate between both kinds of understanding, does not make the same separation for two reasons. First, Heidegger does not differentiate between embodied understanding and conceptual-representational understanding, or rather, between readiness-to-hand and presence-at-hand, the way Dreyfus and Wheeler do. Heidegger nowhere claims that we are experiencing 'context-

free, self-sufficient substances with detachable properties—McDowell’s world of facts, features, and data’ when we engage with the world as present-at-hand, as Dreyfus (2007a, 364) suggests. Rather, he makes clear that presence-at-hand is grounded in readiness-to-hand. As he states, “readiness-to-hand is the way in which entities as they are ‘in themselves’ are defined ontologico-categorically” (Heidegger 1962, 101). Further, “when we merely stare at something (presence-at-hand), our just-having-it-before-us lies before us as a failure to understand it any more. This grasping which is free of the “as”, is a privation of the kind of seeing in which one merely understands (readiness-to-hand). It (presence-at-hand) is not more primordial than that kind of seeing (readiness-to-hand), but is derived from it” (Heidegger 1962, 190, brackets added). And Heidegger makes elsewhere plainly clear that presence-at-hand is this deprived form of merely looking at things. The clearest expression of this might be, ‘theoretical behavior is just looking, without circumspection’ (Heidegger 1962, 99, emphasis added). This means, presence-at-hand is a ‘deficient mode of concern’ (Heidegger 1962, 103)—in which something that was formerly ready-to-hand is only just present (*‘Nur-noch-vorhandensein eines Zuhandenen’*) (Heidegger 2006, 73). Here we can also see the second reason, why Heidegger would reject Dreyfus’s and Wheeler’s separation between both kinds of understanding. For Heidegger, the difference between readiness-to-hand and presence-at-hand is not a division between conceptuality or representational thought on the one hand and sensorimotor or embodied understanding on the other hand. Heidegger nowhere claims that conceptual or representational understanding governs presence-at-hand. As we have seen above, Heidegger uses perceptual and agential vocabulary to describe how we encounter the world as present-at-hand. This makes further sense, if we consider the role of language in Heidegger’s care structure in the form of discourse. The care structure, Heidegger’s most basic ontological structure after temporality (Heidegger 1962, 329), is co-constituted by understanding, state-of-mind (affect), falling, and discourse (Heidegger 1962, 384-385). Understanding is characterized by its disclosing ability, which presents an object or a situation, together with affect, as mattering to an agent by showing up for which purpose something can be used (Heidegger 1962, 182). Discourse, which is the condition for speaking a language, is not conceived of as detached theoretical linguistic thinking, but as an existential structure that contributes to the structure of understanding and allows for its articulation (Heidegger 1962, 203-204). Discourse, as part of the care structure, is characteristic of both, readiness-to-hand and presence-at-hand. Yet, in both cases it is a co-constitutive part of the care structure, but never a self-standing intellectualist device for judgment and representation, as both Dreyfus and Wheeler suggest.

⁵To explain the relationship between both kinds of understanding in terms of schemata has further explanatory advantages, even if we should only accept a loose relationship. For instance, if conceptual thought is governed by spatiotemporal schemata, we might be able to account for the grounding of demonstratives and the identification of spatiotemporal objects in perceptual judgments. Both these properties of thought relate to spatial and temporal

properties of objects and schemata are structures that explain how we can relate to objects in space and time.

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