3 Two Alternative Lines of Argumentation

3.1 Material Composition and Mereology

Reflections on the correlation and the ontological nature of parts and wholes have been a recurrent and broadly applied topic of western philosophy. It would go beyond the scope of the present project to even summarize the different historical positions and arguments in this regard.[1] However, in the past decades and with the establishment of mereology as a logical as well as ontological subdiscipline[2], there has been a sort of renaissance of part-whole thinking in philosophical ontology. A considerable literature, particularly of an analytic fashion, has grown up around this theme. In this context, it is striking that although mereology is principally unrestricted,[3] most formal-ontological theories on parts and wholes are deliberately restricted to material entities with detachable parts (pieces) and analyze the logical and spatiotemporal problems, puzzles and paradoxes such entities entail. This is striking, because, according to K. Fine [1995: 463], "Husserl's third *Logical Investigation* is perhaps the most significant treatise on the concept of part to be found in the philosophical literature." It is exactly in this fundamental text for contemporary part-whole theory that Husserl, as we saw above, develops a framework in which most entities have a place within a fourfold pattern: (1) as an ontological piece/aggregation, (2) as an ontological moment/whole, (3) as a perceptible piece/aggregation, and (4) as a perceptible moment/whole.

In most of the current research on ontological part-whole structures, however, only (1) and (3) seem to be taken into account, whereby often an instance of (3) is discussed, without any further reflections on its appearance as a content of perception, and from there a statement regarding (1) is concluded. In so doing, (2) and (4), in which the equally important undetachable and founded parts of an entity could be reflected on, remain unconsidered. Consequently, parts are only treated as objects in their own right, which moments are ontologically precisely not: Although they can be *distinguished* in perception, they are ontologically *fused*. In other words, many current ontological studies that concentrate on parts and wholes seem only to consider the primary qualities of an entity as a proper part of this entity, while they disregard an entity's secondary (let alone tertiary) qualities or treat them misleadingly as discontinuous pieces instead of continuous moments. This critique corresponds with the one that Smith et al. [1982: 54–5] make: "The ontological structure, both formal and material, uncovered by

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[1]On parts and wholes in Plato cf. Harte [2002]; in Sextus Empiricus cf. Barnes [2011]; in Aristotle cf. Muižniece [2012]; in Aristotle, scholastic and modern philosophy cf. Pasnau [2011] and Brown & Normore [2014]; and in early modern philosophy cf. Holden [2004].

[2]Cf. for historical and technical introductions Simons [2000], Ridder [2002], Hovda [2009], Cotnoir [2014] and Varzi [2016].

[3]Cf. van Inwagen [1994: 207].

Husserl has been obscured to philosophers working within the analytic tradition primarily in virtue of the unargued identification of the *formal* with the formal *logical*. Once the distinction between formal logic (i.e. formal theory of meaning-connections) and formal ontology (formal object-theory) is clearly drawn, then it becomes possible to recognise also material connections both amongst meanings and amongst objects."

Many examples of contemporary contributions on parts and wholes can be given in which this general tendency comes to the fore. R. Chisholm begins his 1973 article 'Parts as Essential to Their Wholes' by presenting "the principle of mereological essentialism. The principle may be formulated by saying that, for any whole x, if x has y as one of its parts then y is part of x in every possible world in which x exists. The principle may also be put by saying that every whole has the parts that it has necessarily, or by saying that if y is part of x then the property of having y as one of its parts is essential to x. If the principle is true, then if y is ever part of x, y will be part of x as long as x exists." [Chisholm 1973: 581–2] To illustrate this principle, Chisholm refers to a passage in G.E. Moore in which the latter writes about the necessity for a particular whole to have its particular parts in order to be this particular whole. Moore demonstrates this by referring to visual sense data, i.e. to "a colored patch half of which is red and half yellow" [Moore 1922: 287–8], and concludes that this "particular whole could not have existed without having that particular patch [the red or yellow one, M.S.] for a part." [id.: 288]. Furthermore, Moore states that although the particular whole depends on its particular colors as parts (a principle that is also true for perceptible parts and wholes in the Husserlian framework), the particular colors do not depend on the particular whole (in contrast to what we learned from Husserl considering moments as dependent on their whole). According to Moore, it "seems quite clear that, though the whole could not have existed without having the red patch for a part, the red patch might perfectly well have existed without being part of that particular whole." [id.]

Moore thus takes the color to be a detachable piece instead of an undetachable moment. This would make the 'colored patch' a material aggregate instead of an immaterial whole, because I cannot think of any way a color could be detached from a whole if this whole were not a material entity, like a patch in the sense of a two-colored 'sewn-on badge' or 'eye-patch'. Such material entities you can cut in two halves with a pair of scissors. If you cut them along the connecting line of the two colors, you can 'detach' the colors, although it is actually not the colors that are detached, but the material texture of the patch. The two colors are not detached if their material basis is not detached as well, but this would not be true the other way round, as the material basis can also be detached *not* along the connecting line of the colors. In this example, the particular colors would indeed not exist without being arranged in this particular whole that, in turn, is dependent on the material texture of the patch. Chisholm, however, also understands the colors as pieces, but, at the same time, he seems to feel the complexity that is involved when ontological claims are made concerning the (in)dependency of secondary qualities like colors, particularly in connection with their material counterparts. This becomes evident right after he quotes Moore, because from then on, he decides to exclusively focus on primary qualities. "Instead of considering such things as sense-data and visual patches, let us consider physical things. Let us picture to ourselves a very simple table, improvised from a stump and a board." [Chisholm 1973: 582–3]

The remainder of Chisholm's article consists in puzzles concerning the detachment of the

stump and the board as parts (pieces) from the table as a whole (aggregate). Reflections on the role of perception, which would be significant for analyzing the parts of the table as perceptible moments, however, are explicitly factored out.[4] Although such a reduction of complexity is admittedly beneficial for tackling problems considering the constitution, identity and persistence of material entities, it does not help us any further in the ontological determination of PWO, because the next step towards this determination asks for a closer inspection of secondary qualities as undetachable yet distinguishable moments of perceptible wholes.

A more nuanced position concerning the immaterial parts of an entity is held by L. A. Paul in her 2002 article 'Logical Parts'. Paul starts by describing "a large, comfortable red chair" [Paul 2002: 578] in her office. We "can think of the chair as having many different spatial components, but we can also think of the chair as having many different *qualitative components*. The chair has armrests, a headrest, a back and a seat, but it also has the properties of being red, of being large, and being comfortable. The chair is the sum of its spatial components, but it might very well be that the chair is also the sum of its qualitative components." [id.] What Paul calls the 'spatial components', we can identify as the primary qualities or material parts of an entity. More interestingly, Paul also mentions 'qualitative components' like the redness, the largeness and the comfortability of the chair. While I would distinguish 'redness' and 'largeness', as secondary, perceptible qualities, from 'comfortability' as a tertiary quality (let us say the *how* it is to perceive something), Paul summarizes such diverse qualitative components as 'logical parts'. Although the reason for this renaming is not quite clear to me,[5] she argues that spatial parts and logical parts are two different kinds of parts of the same whole. They have to be kept apart and do not stand in a transitive relation to another.[6] However, what logical parts seem to share with spatial parts (or 'spatiotemporal' parts, as Paul also calls them) is what we can call with Husserl the 'independence' or 'discontinuation' of a part. In the same manner in which we can detach a material part of a red cup, say its handle, and this part continues to exist as an entity in its own right, Paul thinks that we can also detach the logical part such as the particular redness from the cup. Unlike a Husserlian moment, the particular redness then

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[4]"We are saying, in application to our example of the table, that there exists an x, a y, and a z such that: x is identical with this table, y is identical with this stump, z is identical with this board, and x is such that, in every possible world in which x exists, it is made up of y and z. Our statement says nothing whatever about the way in which human beings may happen to conceive or to look upon such things as this table. And, a fortiori, it says nothing whatever about the way in which we may happen to describe this table or use the language we do. Its subject-matter is no more nor less than this table, the parts of this table, and the possible worlds in which this table exists." [Chisholm 1973: 583]

[5]"If objects have properties as parts, then a simple way to define objects is as (certain) fusions of properties. Defining objects in this way amounts to subsuming the bundle theory under the aegis of mereology. Start with sums or fusions of properties, where the properties that compose the fusion are parts of the whole. Since the properties in the fusion need not be qualitative (e.g., they could be the having of locations), call the properties that are parts of the whole 'logical parts' rather than 'qualitative parts'. So a logical part of a fusion is a property which is included in the fusion." [Paul 2002: 579] So logical parts seem to include both qualitative parts and non-qualitative parts, whereby non-qualitative parts have locations, but are not spatial parts, because these are opposed to logical parts as qualitative parts? If this recapitulation of Paul's argument is correct, then I do not understand it. What is the difference between a spatial part and a logical part with 'the having of locations'? And aren't spatial parts also 'included in the fusion' of the whole?

[6]"We also have to be clear about what *kinds* of parts we are making claims about: when, for example, I say that a spatial part of my chair, the cushion, includes the logical part of being cushion-shaped, it does not imply that my chair includes the logical part of being cushion-shaped, for we are talking about different kinds of parts. (Transitivity implies that a logical part of a logical part of O is itself a logical part of O. It does not imply that a logical part of a spatial part of O is a logical part of O.) [id.: 581]

continues to exist as an entity in its own right. "And just as the objects we can identify by mentally subtracting away various spatial parts of the cup as a whole *really exist* as objects in their own right even if the spatial parts aren't actually subtracted away, objects that we can conceive of by mentally subtracting away various logical parts of the cup – even if we can't easily imagine them – *really exist* as objects in their own right, even if the logical parts aren't actually subtracted away." [id.: 582]

So, although spatial and logical parts are taken as different kinds of parts (which I also think they are), they would both fall under the category of 'pieces' in the Husserlian sense (which I do not think they do). Although logical parts refer to different qualities than spatial parts, Paul basically states (without giving any argument for it) that logical parts can be mereologically treated *as* spatial parts. While I think that what Paul calls 'logical parts' would require at least a consideration of how these parts are empirically perceived or phenomenologically experienced in order to attribute them to an entity, she directly attributes them to an entity without such a consideration. Of course, it is advantageous for Paul to postulate the independence and discontinuity of logical parts, because in so doing she can explain, for instance, how two red cups that look identical can be spatially distinct while sharing the same redness.[7] However, can the particular redness or the particular comfortability of a particular chair de facto be detached from the context, i.e. from the whole in which these qualities appear, and then continue to exist as ontologically independent objects in their own right? That we can indeed subjectively distinguish and single out such moments of a whole is one thing, but that we should also assume that this perceptual act of distinguishing is accompanied by a fragmentation or discontinuation of the logical parts' continuity on the ontological level is quite another thing. Although Paul sporadically tends to reduce the detachment of logical parts to subjective acts of singling or 'picking' out,[8] which would not necessarily entail the thus detached logical parts ontologically existing as objects in their own right, she accepts this entailment and admits that logical parts, even counted as overlapping with other logical parts, add up to the ontological inventory that is also filled with spatiotemporal parts.[9] Thus, by transferring the ontological divisibility and discontinuation typical for material parts to immaterial parts, which I think is a questionable

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[7]"The objects that we have called the red cups with all their properties have all their logical parts, including their spatial locations, and so the objects that are the cups are spatially distinct. But when we subtract away the proper logical parts which are the particular spatial properties (and perhaps other relevant parts, such as the part of being a cup) we are left with the part of redness; in other words, we are left with just one object. This lone object grounds the claim that the redness of each cup is the same. Here, there is just one object *that has no location properties as parts*. This object – call it R – partly overlaps objects that include location properties as parts, but R does not include the location properties themselves." [id.: 584]

[8]"Moreover, R is not transcendent, at least not in the usual sense of the term. The point here is that we can pick out and hence distinguish R from objects that include locations as parts because R overlaps these located objects, not that R exists in some mysterious realm distinct from particulars." [id.: 584]

[9]"The obvious issue I need to address is the size of my ontology. Doesn't my theory of logical objects imply that when we count the number of objects in the world, we will find far more objects than we ever dreamt we had? The easy answer to this question is yes - we have more objects than we common-sensically thought we had. [...] Related to this point, it is important to recognize that context determines how we count. In a theoretical context like the one established by this paper, we stand back and count many different overlapping objects; many objects that are not logically distinct from one another. [...] Recognizing the phenomenon of overlap amounts to the recognition that although we usually count by distinctness, we can also count by difference. Recognizing the existence of logical parts along with spatial (and in some cases, temporal) parts means recognizing that we can count by spatial, temporal and qualitative difference as well as distinctness." [id.: 592–3]

move that should at least be justified, Paul on the one hand overcomes the exclusiveness of parts seen as spatiotemporal entities (pieces). On the other hand, she still – at least in this particular article – reduces immaterial moments to the mereological and 'horizontal'[10] level of material pieces and aggregates.

In the light of my own project, Chisholm's and in particular Paul's article deserved a special mention, because they are at least concerned with the secondary and, in a rudimentary sense, tertiary qualities of an entity as this entity's parts. Many other texts in what may be called 'analytic part-whole theory', however, seem to restrict themselves, i.e. the domain over which their mereological reflections range, to material aggregations and pieces from the outset, without taking immaterial parts and their perceptibility or experienceability into consideration. Examples would be van Inwagen's [1990] influential *Material Beings*; N. Markosian's 'Brutal Composition', in which he concentrates on "composite objects in the physical universe" [Markosian 1998: 211]; K. McDaniel's 'Parts and Wholes';[11] P. Hovda's 'Natural Mereology and Classical Mereology';[12] or K. Koslicki's *The Structure of Objects*, in which, while arguing in favor of the structural arrangement of parts in order to avoid the creation of a whole out of every arbitrary combination of parts, she contents herself with an "analysis of ordinary material objects" [2008: ix]. Even when the problem of the detachability of parts from the whole is discussed (for example: Is the upper third of the Eiffel Tower an object in its own right?), these parts are usually understood as physical parts that could – once detached – exist on their own.[13]

In these approaches, parts are usually not understood as, for instance, an entity's values, aesthetic qualities, or cultural meanings, as when we ask: Could Mona Lisa's smile be detached from the painting and exist in its own right? Or: How can I be an undetached part in the online video game I'm playing and at the same time be materially detached from this game, because my real body is not in the world in which my momentary actions take place (the experience of 'telepresence')? Or: How can a *Glühwein* as an essential part of a German Christmas market be detached from this whole and exist as an equally flavorful beverage on a hot summer day? To me it seems that such questions would require other, more embracing, contextual and experiential, less materialistic and formalistic approaches to part-whole thinking. Without any doubt, the reduction of parts to discontinuous pieces is beneficial in its own right and should certainly not be criticized or even downgraded from an external point of view. Among other things, such a reduction paves the way to significant philosophical questions such as the ones about (1) the possible identity of material aggregates when their parts undergo change, (2) the possible identity of parts with the whole they compose, and (3) the possible formalization of part-whole structures in a technical language such as the one of classical extensional mereology. Let me just finish this section by outlining these questions, before I dedicate the remainder of my project to the other branch that Husserl's part-whole ontology invites us to follow: the

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[10]Cf. subsection 2.2.5.

[11]"In what follows, we will set aside concerns about whether parthood is topic-neutral and whether compositional pluralism or monism is true. We will focus on questions about the parthood relation as it applies to material objects, and we will assume that there is only one such relation." [McDaniel 2010: 416]

[12]"We begin with some *natural objects* (to be thought of as concrete *natural units* on the model of the naturalistic mereology) and a given part-whole relation on them; call the set of these objects the *natural domain* and the relation the *natural* part-whole relation." [Hovda: 2014: 146]

[13]Cf. van Inwagen [1997] and Varzi [2013].

perceptual side of interdependent moments and wholes.

3.1.1 Part-Whole Identity When Parts Undergo Change

The question concerning the possible identity of material aggregates when their parts undergo change is often expressed in puzzles, the most famous of which is probably the Ship of Theseus Puzzle. This puzzle has been discussed since the beginning of Western philosophy, but has certainly found a revival in recent studies in the context of mereology. In his article 'The Problem of Material Constitution', M. Rea describes the Theseus puzzle as follows: "Consider the Ship of Theseus: a wooden ship that, over the course of time, gradually undergoes the replacement of each of its constituent planks. Clearly, it seems, the ship survives each individual replacement; hence, there is good reason to think that the ship that exists once the series of replacements is complete is the ship we originally started out with. But now suppose someone takes the discarded planks and puts them back together in their original form as a ship [which is T. Hobbes' contribution to the problem, M.S.]: it seems that there is also good reason to think that this ship is the ship we started out with. But, of course, both ships cannot be the Ship of Theseus; so the question is, Which of the final two ships is identical with the original?" [Rea 1995: 532] To better analyze this problem, Rea first identifies five general assumptions whose joint concurrence would cause this and related puzzles[14] of material constitution, because they are all plausible yet incompatible: the Existence Assumption ("there is an F and there are ps that compose it" [id.: 527][15]), the Essentialist Assumption ("if the ps compose an F, then they compose an object that is essentially such that it bears a certain relation R to its parts" [id.]), the Principle of Alternative Compositional Possibilities ("if the ps compose an F, then they compose an object that can exist and *not* bear R to its parts" [id.]), the Identity Assumption ("if the ps compose both a and b, then a is identical with b" [id.]), and the Necessity Assumption ("if a is identical with b then a is necessarily identical with b." [id.]). In a second step, Rea demonstrates how these assumptions create the paradoxical character of the Theseus puzzle and how the rejection of any one of them would solve this puzzle. Thirdly, instead of arguing for his personal preference, Rea provides us with a helpful overview or 'taxonomy' of different positions and the corresponding (almost exclusively contemporary and analytical) philosophers that reject any one of these five assumptions.

However, it should be clear by now that regardless of the different kinds of solutions and adaptations of this[16] and similar puzzles, such puzzles are only consequential when we regard the material, independent, detachable parts of aggregations, i.e. when we ask: "How much change of any kind is consistent with a physical object's continued existence?" [Carroll et al. 2010: 215] Ontologically seen, this question does not address every possible domain in which

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[14]In the article just quoted, Rea also discusses the 'Growing Argument', the 'Body-minus Argument' and "Allan Gibbard's puzzle about Lumpl and Goliath (a piece of clay and statue, respectively)." [Rea 1995: 525] These puzzles are based on the same assumptions as the Theseus puzzle.

[15]Rea defines 'ps' as non-overlapping material parts of a whole x they compose, whereby "every part of x overlaps at least one of the ps'." [id.: 526] In the case of the Theseus puzzle, 'p' would stand for one plank of wood.

[16]Cf. for example Scaltas [1980], who, in order to show that "there is no sharply defined hierarchy of sufficiency conditions" for this problem, lets two identically constructed but differently painted ships run offshore and exchange their planks before they arrive in the harbor of Delos. For very detailed discussions of the Theseus puzzle cf. Gallois [1998] and Wiggins [2001].

we can talk about parts and wholes. Such a restriction to material entities only gives cause for concern if one derives from or identifies with material entities alone a mereological theory that is supposed to be 'topic-neutral', i.e. unrestricted as a formal ontology. If such a one-sidedly derived or identified mereology is to be valid for *all* kinds of parts, thus implicitly also for moments, it tacitly disallows other domains in which part-whole structures can be located as well.[17] This unjustified generalization could be called a 'mereological fallacy'. In this regard, I find it even more remarkable when a philosopher like Lowe, after presenting his own and other philosophers' solutions to the Theseus puzzle, concludes his argumentation by denying that another category of objects, namely works of art, can be deconstructed and reconstructed like ships without losing their identity.[18] An even mildly differentiating attitude like his and Paul's definitely indicates the need for an ontologically more complete and diverse discussion of part-whole structures.

3.1.2 Part-Whole Identity as Composition

It is not only the detachment, exchange and reassembling of material parts that involves problems for the identity of the parts' aggregate. The mere concurrence of undetached pieces and the aggregate or fusion they compose also leads to the fundamental question of whether or not the aggregate exists as an entity additional to its pieces. Is a chair an entity that is not identical with, i.e. that exists additionally to the sum of its pieces, say its seat, its back and its legs? If this were to be the case, then we would not only have to make a plenitude of additional 'entries' in our ontological inventory, but we would also have to explain how different material things, e.g. the sum of {seat, back, legs} *and* the chair itself as a whole, can occupy the same spatiotemporal position. Furthermore and with Leibniz' principle of the identity of indiscernibles, we may want to know how the chair and the sum of its parts can be discerned if both have the same properties and the same spatiotemporal position. Above all this, it would be necessary to justify the avoidance of double-counting when it comes to single parts and their

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[17]Cf. in this regard Schwarz et al.'s [2008: 203-4] objection that even within the domain of material objects, one has to distinguish between living and lifeless objects. "For instance, there are no criteria of identity that apply to material things in general. Living beings remain the same entity as long as they stay alive, and they need to exchange matter in order to do so. By contrast, lifeless objects may be identified, simply, in terms of their matter. Further, although (most?) artifacts are lifeless objects, an identification of artifacts in terms of their matter leads to certain problems: a ship arguably does not cease to be the same ship when all its planks are replaced. Hence, living beings, artifacts, and other physical objects should be distinguished, not in terms of specific differences regarding their features and qualities, but in terms of the principles according to which they may reasonably be identified as the same things over a certain period of time [...]."

[18]"The answer seems to be that in the case of a work of art the original artist's *work* is essential to its identity. Thus Leonardo's *Last Supper* has to be *his* work, the result of *his* efforts: if it is substantially 'restored' then what remains *isn't* the result of *his* efforts, but is of those of the restorers. With ordinary artifacts this feature is not particularly crucial, since we are likely to be more concerned with the object's utility (works of art are peculiar precisely in that they are *not* created primarily for any utility value). We value a work of art not least for being the *product of a certain artist*: and this is also why *replicas* are no substitute for the original thing and don't count as the 'same work,' i.e., why works of art – at least in the case of paintings and sculpture – are *particulars* rather than *universals*, tokens rather than types." [Lowe 1983: 231] Beyond doubt, Lowe's artist-focused and very brief explanation of why artworks are not dispersible into parts without being destroyed may be disputable. But it is certainly to his credit that he is able to delineate a bigger picture, showing that physical parts and aggregations are not the only way we can think and problematize reality as consisting of parts and wholes.

whole.[19] For reasons like these, arguments have often been put forward[20] for some weaker or stronger version of what D. Lewis calls and defends as 'Composition as Identity'. Although, for Lewis, every possible combination of parts, for example the seat of a chair and B. Obama's left ear, can be mereologically fused, i.e. regarded as a whole, such wholes are not ontologically additional entities. It is sufficient to commit ourselves to the existence of the parts and give a full description of them,[21] whereas the whole they possibly compose is included in this full description and is just what D. Armstrong calls a "supervenient", which is an "ontological free lunch" [Armstrong 1997: 13]. Part-whole identity is supposed to guarantee the 'ontological innocence' of mereology.

However, we should again stress the point that this current debate on the identity or difference between material parts and their whole presupposes the detachability of the parts and therefore does not count for all kinds of parts. It would be fallacious to identify the kind of mereology that follows from Composition as Identity as a formal ontology with an unrestricted scope. In fact, as A. Varzi, who himself endorses a weak version of Composition as Identity, makes us aware, the ontological innocence of mereology presupposes the assumption that there are no wholes that are irreducible to their parts. "Indeed, Composition as Identity is a metaphysical thesis: if true, it must be necessarily true. The very *possibility* that there be irreducible wholes would therefore suffice to establish the falsity of the thesis [...]." [Varzi 2014: 63] If it indeed

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[19]Cf. on this Baxter's [1988: 200] juice example: "If something exists then it is one thing. So apparently if a whole with two parts exists, then three things exist: the whole and each of the parts. But this is a very counter-intuitive way to count. Consider the express check-out line in a grocery store. It says 'six items or less'. You have a six-pack of orange juice. You might well wonder if you have one item or six items. But you would never hesitate to go into the line for fear of having seven items: six cans of orange juice plus one six-pack. [...] In counting we either count the whole as one, or each part as one. If we count the whole then we do not count the parts. If we count the parts then we do not count the whole."

[20]This is how Brown et al. [2014: 43] conclude their article 'On Bits and Pieces in the History of Philosophy': "Medieval and early modern philosophers wrestle with the relation between an ordinary physical or material thing and its parts taken collectively in ways that are still very familiar. The tension between pictures in which such things are composed by assembling parts that are at least ontologically prior and pictures in which they are themselves ontologically basic and their parts are derivative upon them remains with us. One thing that history makes clear is that the dominant tradition throughout has been one which maintained that the parts of a composite thing are as real as the thing itself, that it is possible (in some sense) for them to exist apart from the whole of which they are parts, and that taken together they are *what* the thing is whether or not they are the thing. The doctrine that the parts of a composite either do not properly exist or are derivative upon the whole seems, despite Aristotle's interest in it and Aquinas's endorsement of it, always to have been a minority position. What the history also suggests, however, is that while the doctrine that what a thing is is its actual parts taken together is firmly embedded in our metaphysical tradition, it has never ceased to be problematic. Philosophy often progresses by rejecting the assumptions on which earlier debates are based but these assumptions seem particularly hard for us to give up. What lesson can we learn from that?"

[21]"To be sure, if we accept mereology, we are committed to the existence of all manner of mereological fusions. But given a prior commitment to cats, say, a commitment to cat-fusions is not a *further* commitment. The fusion is nothing over and above the cats that compose it. It just is them. They just are it. Take them together or take them separately, the cats are the same portion of Reality either way. Commit yourself to their existence all together or one at a time, it's the same commitment either way. If you draw up an inventory of Reality according to your scheme of things, it would be double counting to list the cats and then also list their fusion. In general, if you are already committed to some things, you incur no further commitment when you affirm the existence of their fusion. The new commitment is redundant, given the old one. For the most part, if you are committed to the existence of a certain thing or things, and then you become committed to the existence of something that bears a certain relation to it or them, that is indeed a further commitment." [Lewis 1991: 81–2]

were true or even possible that there are moments that require a whole to exist, because only in this whole do they find completion, then wouldn't this whole be irreducible to the moments, just because it includes the completion its individual moments do not have? Such a possibility would at least relativize the ontological or metaphysical conclusions that are drawn when only reducible wholes (i.e. material aggregates) are equalized with their material pieces, which is itself, within the limits of this ontological region, certainly not implausible. However, if we agree for example with K. McDaniel's argumentation in his 'Against Composition as Identity' and allow for irreducible wholes that have strongly emergent properties like "*phenomenal* properties or *qualia*" [McDaniel 2008: 131] that the parts themselves do not have, then we can share his conviction that wholes, "especially wholes enjoying emergent properties, are something 'over and above' their parts in the following sense: a mere description of the proper parts need not be a complete description of the emerging whole." [id.: 133]

3.1.3 Part-Whole Identity in Mereology

A third major topic in the contemporary discussion of part-whole relations concerns their logical formalization. The most prominent attempt to formalize such structures is called *classical extensional mereology* (CEM), to which I already alluded in the previous paragraphs. Basically, CEM is first order logic that is enriched with a few key concepts such as 'proper part' (x<y if x is a part of a whole y and x≠y), 'improper part' (x=y if the whole is a part of itself), 'overlap' (x∘y if x and y have a part in common), 'disjointness' (x∫y if x and y have no part in common), the 'universe' (the sum of all parts U), an 'atom' (At(x)), as well as three axioms that determine the transitivity, asymmetry and irreflexivity of proper parthood.[22] These axioms mean that "if one object is a proper part of another and the second is a proper part of a third, then the first is a proper part of the third as well [transitivity]; if one object is a proper part of another, then the second is not also a proper part of the first [asymmetry]; and, finally, nothing is a proper part of itself [irreflexivity]. Thus, the relation of proper parthood is a *strict partial ordering*." [Koslicki 2008: 11–2] To these basic concepts and axioms we can add, for instance, a mereological notion of fusion, whereby the fusion is usually taken to be unrestricted (every possible relation of two or more proper parts can become a mereological fusion, what Simons [2006: 600] calls "*mereological maximalism*"),[23] principles of composition[24] and decomposition,[25] extensionality principles that determine that objects with the same parts are identical,[26] or plural variables, constants, quantifiers and predicates in order to create a plural logic that can describe fusions.[27]

Regarding the ontological scope of classical mereology, Varzi points out that "mereology assumes no ontological restriction on the field of 'part'. In principle, the relata can be as different as material bodies, events, geometric entities, or spatiotemporal regions, [...] as well as abstract

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[22]Cf. Simons [2000: 9–17] and Koslicki [2008: 11]. On the concept of the Universe cf. Simons [2003].

[23]Cf. Uzquinao [2006] and Cotnoir [2014: 16].

[24]"For example, one may consider the idea that whenever there are some things, there exists a whole that consists exactly of those things – i.e., that there is always a *mereological sum* (or 'fusion') of two or more parts." [Varzi 2016]

[25]"For example, one may consider the idea that whenever something has a proper part, it has more than one – i.e., that there is always some *mereological difference* (a 'remainder') between a whole and its proper parts." [id.]

[26]Cf. Simons [2000: 1] and Cotnoir [2014: 17].

[27]Cf. for an introduction Cotnoir [2014: 18–22].

entities such as properties, propositions, types, or kinds [...]. As a formal theory (in Husserl's sense of 'formal', i.e., as opposed to 'material') mereology is simply an attempt to lay down the general principles underlying the relationships between an entity and its constituent parts, whatever the nature of the entity, just as set theory is an attempt to lay down the principles underlying the relationships between a set and its members." [Varzi 2016] This ontological unrestrictedness or 'topic neutrality', which by definition should also include Husserlian moments, would make mereology a perfect candidate for a formal part-whole ontology that is not restricted to one region of reality alone.

At the same time, however, a mereological fusion is defined as a 'sum' of its parts, i.e. as the exact outcome of an 'and-relation', of a logical conjunction ∧. "Something is a *fusion* of some things iff it has all of them as parts and has no part that is distinct from each of them." [Lewis 1991: 73] Yet we saw that in the case of moments and wholes, the whole necessarily includes the completion of its moments. It thus includes more than the parts taken as a sum. By the same token, in order to describe a mereological fusion, we have to think of and express the single parts of the fusion as ontologically distinguished or distinguishable from the fusion itself, just as we have to distinguish parts before we determine that they may overlap. To me it seems that this involves a certain independence and even an ontological priority of parts[28] pertaining to their possible fusion. In the framework of classical mereology, parts can, but do not have to, enter a mereological fusion in order to exist. Due to mereology's unrestricted universalism, this makes sense, because if every part necessarily had to enter a fusion with other parts in order to exist, reality would be overwhelmed with all kinds of weird fusions such as {Putin's left leg + the apple I just ate}. The two parts of this possible fusion can exist without being fused like this, and it is sufficient to classify the actual parts as existent while the possible fusion is not a further ontological entity.

Furthermore, it is a principle of CEM that for "any xs, those xs have one and only one fusion." [van Inwagen 1994: 207] This may be true if we restrict parts to their material dimension. But imagine, for example, a team of eleven professional football players during a match. Not only would this team stay the same if one player had to leave the field or be replaced (the goal counter doesn't start anew if a player who has the property of 'shot a goal in this match' is replaced). The eleven players also form more than one kind of fusion: a spatiotemporal fusion, a fusion of 'team spirit', a sub-fusion of the club's future history, a fusion of role models for fans and trainees, a symbolic fusion for football as a sport, a fusion of employees with an income way above average, etc. In short, whereas we do not actually encounter all kinds of part-whole relations that are formally possible in CEM, we do indeed actually encounter part-whole relations that do not seem to be formally possible or admissible in CEM.

One critical conclusion that can be drawn from this, is that, as D. Mellor formulates it, "we must derive the formal properties of our part-whole concept from those of part-whole relations, not the other way round. We cannot derive them from *a priori* intuitions about parts and

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[28]Cf. for example R. Cameron [2014], who holds the view that parts *ground* and *generate* the whole if they are arranged in a certain way, which of course, means that they have to exist prior to the whole. "What grounds my existence is not merely my parts, but my parts being arranged a certain way. Necessarily, those parts being arranged that way is sufficient for my existence, but all the parts could exist and I fail to exist if those parts are not so arranged, for then my actual grounds would not obtain. And those parts can exist and not be so arranged but I exist and be composed of *other* parts that *are* appropriately arranged." [Cameron 2014: 103]

wholes in general." [Mellor 2006: 141] This means that we have to study actual occurrences of part-whole relations first before we put a formal, generalizing and unrestricted theory or model over it, because "Models are however one thing, reality is another." [id.: 143][29] With Lowe[30] and Simons[31] we can draw another critical conclusion, namely that CEM, as a formal system, should not be (mis)understood as a formal ontology, because it seems to focus on and formalize only one kind of part-whole relation (detachable and independent parts, that are in reality instantiated by material entities and their primary qualities) without further determination of the existence conditions, the limits and the ontological applicability of such relations. Such a (mis)conception of CEM as an ontological theory that is supposed to range over *all* kinds of part-whole relations is held by what McDaniel calls 'compositional monists'.[32]

It should be evident by now and it will become even more evident in the subsequent chapters that I take compositional monism to be wrong. Neither are part-whole structures exhausted by material entities and their characteristics as pieces and aggregates, nor can all part-whole structures sufficiently and meaningfully be expressed in the a priori formalism of mereology. I hope to have shown in this brief section that in the light of the fourfold pattern the Husserlian part-whole ontology offers and in which almost every entity can be understood as (1) an ontological piece/aggregation, (2) an ontological moment/whole, (3) a perceptible piece/aggregation, and (4) a perceptible moment/whole at the same time, the current analytic debate on parts and wholes almost exclusively but not always acknowledgedly contents itself with (1) and (3). In the course of chapter 2, however, I showed that the aim of this project, which is the determination of the ontological nature of PWO, urges me to leave (1) and (3), and, in so doing, the just outlined aspects of the current discussion on independent parts and wholes, behind. While for most contemporary ontologists who work in the field of parts and wholes, (1) and (3) are the

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[29]Simons [2006] likewise argues that we should study the function of parts in natural, i.e. actual existing wholes, because unrestricted mereology's "abstract considerations are so far removed from actual cases, they cannot be taken as reliable guides to a realistic ontology of part and whole." [Simons 2006: 611]

[30]"The upshot of all this is that the formal systems approach [to which Lowe explicitly adds mereology, M.S.] to ontology, which has been immensely popular in recent decades, gives the superficial appearance of taking ontology seriously and in a way that is conducive to realism, but in fact avoids any serious engagement with the true subject-matter of this branch of metaphysics. Instead of talking about entities of various different categories and attempting to specify their existence and identity conditions in a perspicuous way, select species of entities are chosen as *surrogates* for entities of other kinds and ontological discussion is transmuted into talk about these surrogates – for the sole reason, it seems, that a well-developed formal system happens to be available for talking about the surrogate entities in question. A spurious air of technical and scientific exactitude is thereby conferred upon the projects of these pseudo-ontologists, who in reality are not doing serious ontology but have merely changed the subject." [Lowe 2011: 84]

[31]"But in particular it cannot be assumed that because the part-relation behaves in one way in one domain – in the ontology of spatiotemporal regions, say – that it must behave similarly elsewhere. All that can be guaranteed *a priori* is that the part-concept has the formal characteristics which are analytic of it. When it comes to the honest toil of investigating the principles governing what objects are parts of others, and what collections of objects compose others, it appears that most ontologists have been following the paradigm of abstract algebra when it would have been better to take a lead from sciences such as geology, botany, anatomy, physiology, engineering, which deal with the real." [Simons 2006: 612–3]

[32]"*Compositional monism* is the view that (i) there is exactly one fundamental part-whole relation and (ii) this relation applies to elements of every ontological category. According to the compositional monist, parthood is importantly similar in this respect to the relation of identity. Just as there is only one fundamental identity relation that applies to any entity regardless of what ontological category it belongs to, there is only one fundamental parthood relation. Accordingly, a congenial position for the compositional monist to hold is that the parthood relation is a formal logical (or ontological) relation, just as identity is." [McDaniel 2004: 141]

way to go, for my own project they would mean a dead end. Moreover, it turned out in the previous chapter that a closer inspection of (2) is equally fruitless for the moment due to the apparent ontological *absence* of PWO. Therefore, the only remaining option consists in turning to the domain in which PWO seems to be *present* and to enrich the analysis of concepts, including the formal ontologies and models we may base upon such analyses, with what is actually given in and by the perceptible reality or realities in which we participate as perceiving entities.

3.2 Husserl's 4ᵗʰ Logical Investigation

Studying empirical perception is a valid (co-)method for ontological inquiries into reality insofar as it is perceptible. The legitimization of this method has been given in section 1.3: Only by being in touch with reality with our senses are we actually able to justify and – if necessary – correct the ontological categories we derive from our conceptual apparatus. Otherwise, we would remain in an unfalsifiable, self-sufficient model that pretends to be a model of reality, whereas it is actually a result of what can be called a logically coherent auto-analysis of an ontologist's most general concepts. For every complete ontological theory, however, this rather deductive and a priori answering of what I named the meta-ontological *quaestio facti* (where do we get which ontological categories from?) needs to be backed up with the rather inductive and a posteriori answering of the meta-ontological *quaestio iuris*: How can we justify the relationship of these categories with the world they are supposed to be about? After having derived the notion of PWO with its logical incoherency and thus its formal-ontological *absence* by going through the part-whole ontology offered by Husserl in the previous chapter, we have to reverse the deductive top-down approach. It has led us to an idea of PWO that demands the transcendence of the model in which we discovered it. By keeping in mind the characterization of PWO we developed in the course of the last chapter, the task is to restart our ontological investigation, but this time from the very bottom, from 'empirical grounds' (Lowe), and to scale up towards a more comprehensive conceptualization of PWO than a purely formal, a priori ontology could provide.

What has been identified as the inductive, empirical method in section 1.3 is sub-dividable into two branches: the analysis of ordinary expressions and commonsense judgments[33] and the actual performance of experimental research.[34] While chapters 4 and 5 will concentrate on the first branch, chapters 6 and 7 will continue the inductive method for ontological purposes by examining the perception of PWO with the help of experiments conducted by Gestalt-psychologists. However, confusion may arise concerning the reason for conducting the upcoming investigation on ordinary language. Why should we be interested in ordinary language at all when it comes to ontological research? Is ordinary language not known for its vagueness, arbitrariness, plurality, contingency and relative inconstancy? And are ontological categories not supposed to be the opposite: exact, unequivocal, universal, necessary and unvarying over time? Further, how and why is ordinary language supposed to be a bearer of empirical data from which any insights, in particular into the nature of reality and into PWO as an assumed ontological category, can be derived? Even if we agree that ontology should be authorized to

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[33]Cf. subsection 1.3.1.
[34]Cf. subsection 1.3.2.

make use of empirical methods, which is certainly not a mainstream stance in this discipline, we can still doubt that ordinary language, whether on a syntactic, a semantic or a pragmatic level, can be a trustworthy indicator of sense data. It could also just be a way of formulating and communicating our a priori concepts according to ideal laws that themselves do not have to rely on empirical reality at all.

Besides, granted that ordinary language and the analysis of it yields truths about the nature of the world, was it not mentioned in subsection 1.3.1 that even proponents of this thesis like Hirsch, Baker, Smith, Elder and Paul more or less restrict the ontological region over which ordinary judgments range to material, medium-sized, familiar objects? The line of argumentation in the previous chapter, however, led us to the conclusion that the appropriate focus for the determination of the ontological nature of PWO does not lie in this material realm of perceptible pieces, but in the immaterial one of perceptible moments: of a content's secondary, perhaps even tertiary qualities. At least to this objection I can respond directly that medium-sized, material things may display the phenomenon of PWO, but it is not their materiality as such, i.e. their being built up of pieces, that should be the focus of our investigations. Especially from a common sense point of view and by making judgments about the world in our everyday life, the materiality of mid-size objects does not exhaust our ordinary concerns for how perceptible reality is structured and appears as meaningful to us. We will shortly see that linguistic expressions in which we commonly formulate concepts like part, whole and PWO, are – even if such expressions are *about* material objects – deeply connected not merely with physical reality, but with the way we are embodied and enworlded beings. Given the significance of such empirical circumstances, we have to strike a path that is only parallel to, but not congruent with the one trodden by contemporary philosophers who take ordinary judgments to be indeed a legitimate key to ontological issues, but predominantly for the domain of mid-size, familiar artifacts.

3.2.1 *Une Grammaire Générale et Raisonnée*

Another critical objection may be as follows: If I decide to take ordinary language as an indicator for the further determination PWO's ontological nature, generously granted that this is a valid approach, why do I not stay inside the Husserlian framework of the *Logical Investigations*? The very next Investigation after the one about the formal-ontological and perceptual nature of parts and whole that has been discussed at length in the previous chapter contains exactly what we seem to be looking for right now: the application of Husserl's part-whole ontology to matters of language, i.e. of meaning and grammar. As Aurora [2015: 8] writes, "In the fourth investigation, Husserl applies this theoretical framework [of the 3rd LI, M.S.] to a very special domain of objects, namely to expressions, which, in the terminology of the *Logical Investigations*, means linguistic signs which bear a meaning, that is a reference to a class of objects." Why is it necessary to sacrifice such a seamless transition from ontology to language for a rather abrupt change of context, without even knowing whether the upcoming discussion of PWO in the field of cognitive linguistics will yield any positive results – *granted* that it is valid for ontology at all? Indeed, next to the columns of 'formal ontology' and 'material ontology' in the 3rd LI in the tables above, we could just add another column entitled 'expressed meanings in language in Husserl's 4th LI', to which all the aspects of parts and wholes can be applied. In so doing, we could repeat the gradual construction of this table for this new column that then

specifically addresses linguistic meanings and utterances and is likewise aiming at an elucidation of PWO in this regard. The connectivity of this linguistic specification would be guaranteed at the least for the following reasons.

1. Because there are *simple* and *complex* wholes, there are simple and complex meanings, which, in turn, are expressed in simple and complex grammatical constellations of words (§2, 4th LI).

2. Because there are dependent and independent parts, there are dependent and independent meanings and therefore dependent and independent expressions of meanings. While dependent meanings/expressions are characterized as 'syncategorematic' and are by nature incomplete (we remember that every moment needs completion in a more embracing whole), independent meanings/expressions are 'categorematic' and as such make sense even without being embedded in a broader arrangement of meanings and expressions (§4). Just like dependent moments depend on, i.e. are founded by, independent pieces, syncategorematic meanings/expressions (e.g. linking words, prepositions, numerals, references to particular contents) are founded by categorematic meanings/expressions (e.g. nouns, verbs, adjectives, references to general objects).[35]

3. Like parts in general, categorematic and syncategorematic meanings/expressions also cannot be combined arbitrarily, but make sense only when they are arranged according to predetermined sets of laws (§7).[36]

4. To approach the matter of PWO in language, it could be pointed out that Husserl raises the question of why we are strangely able to understand the meaning of a syncategorematic part like "and" or "equals" even when it is isolated from a more comprehensive meaning/expression in which it finds completion and only through which it is normally supposed to be understood. As we saw in section 2.2.7 above, Husserl uses his distinction between formal and material ontology to allow for the isolation of dependent parts only in the case of the latter's involvement of empirical perception, but not in the former's realm of pure, a priori laws of logic. Such a distinction can again be discovered in the case of language. Although Husserl denies the possibility of the isolation of a syncategorematic

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[35]"Whenever we have a unified complex meaning, it is unified by some meanings in the complex being founded on others, maybe one-sidedly, maybe mutually. [...] There are complex acts of meaning, made up of other acts of meaning, for example, when I mean someone as *the man over there in the brown suit talking to the manager*. The whole complex act of meaning is concrete, its parts and their meaning are (in this context) dependent." [Simons 1995: 119f] Husserl "founds the grammatical distinction on a semantic distinction between independent and dependent significations. So doing, he asserts the existence of two general subsystems in language that each contribute its type of meaning. The categorematic (or lexical) subsystem contributes independent significations that can be apprehended per se; the syncategorematic (or grammatical) one contributes significations that are unbounded, 'vague,' and 'call for completion.'" [Bundgaard 2004: 59]

[36]"Law involves specific determinateness of contexts: dependent and independent variables have spheres limited by fixed generic or specific characters." [Husserl 2001: 59] "Due to the laws that govern the configurations of parts into wholes, independent parts (or moments) require not just any whole whatsoever, for they are not amenable to all sorts of completion; rather they require completion of a specific sort. Though Husserl does not conclude this himself, it follows from the above that the meaning contributed by syncategorematic expressions *is the general semantic frame or semantic structure within which they are to appear*." [Bundgaard 2004: 59]

part from defined contexts of *fulfilling* meaning, because these rely on the unalterable, a priori, objective laws studied by formal ontology,[37] it is in our subjective *intentions* of meanings that we can single out and still understand syncategorematic parts. The necessary context for such a dependent part we then only think of and imagine in a vague, undetermined background from which, because this background is itself not defined and therefore not *actually* fulfilling, the part in question receives an *indefinite* completion of meaning (§9).[38] Thus in our mere intention of meanings, like in our mere perception, we keep in suspension both the independency *and* the dependency of moments, here taken as syncategorematic meanings/expressions. In our mere intention, a syncategorematic part possesses its normal attribute of being in need of fulfilment *and* it "is functioning abnormally only in not being connected with other expressions, which give normal utterance to the complementary parts of the meaning here in question." [Husserl 2001: 61] We could say that in our mere intention of an isolated syncategorematic part, we imaginatively oscillate between this part *as* a part and a possible whole in which, *as* a possible whole, the part's meaning can only be understood. Not until we utter this intended meaning do we find ourselves guilty of making a non-sensical expression, thus of expressing an a priori non-sensical meaning qua *fulfilling* meaning, not qua *intended* meaning.

In the light of this obvious applicability of Husserl's part-whole theory, why should there be any reason to go beyond the Husserlian framework when it comes to the determination of the ontological nature of PWO by looking at linguistic expressions?

Irrespective of the validity and therefore potentiality of these objections, the main motive for going beyond the Husserlian framework is straightforward. In accordance with the argumentation given above that a comprehensive ontological theory should transcend the model in which its categories were more or less deductively derived in order to justify these categories with measures that are not self-imposed, we should not turn the application of these categories back into an affirmation of the model. We should not apply the results of the application of a model back to the model from which the initial application took place if we want to verify this model with external measures and if we want to avoid what can be called a 'justificational loop' between model and model-application. However, this is what I think Husserl is doing in his 4th LI. He applies the general notions of parts and whole to matters of language, i.e. meaning and grammar, but only to use language as an extension and affirmation, not as a critical overhaul of his part-whole theory. Husserl may be right in doing so, because naturally he wants to demonstrate the general applicability of his ontological part-whole schema.[39] By contrast, I prefer to be more cautious and (self-)critical in my further discussion of PWO. Instead of going

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[37]"Isolated syncategorematica such as *equals, together with, and, or* can achieve no fulfilment of meaning, no intuitive understanding, except in the context of a wider meaning-whole. If we wish to 'be clear' what the word 'equals' means, we must turn to an intuitive equation, we must actually (genuinely) perform a comparison, and following upon this, bring to understanding and fulfilment a sentence of the form $a = b$." [Husserl 2001: 60]

[38]Cf. on this also Mohanty [1976: 88]: "In the first place, a syncategorematic expression demands completion only on the *basis* of a certain definite meaning which it, even when isolated, conveys. The second point is a consequence of this: the supplementation that is demanded is partly determined by the intended meaning of the syncategorematic expression concerned. The supplementation demanded is no doubt indeterminate with regard to the content to be introduced; but with regard to the form, it is thoroughly determined in the sense that all possible supplementations are circumscribed by a priori laws."

[39]Cf. Husserl 2001: 49.

from language back to the a priori concepts of parts and whole, I want to ascertain whether or not there are empirical grounds on which linguistic structures concerning parts and wholes might rely. Thus instead of going from language 'up' again to the ontological concepts that are relevant for PWO, I think it is more promising to begin with linguistic phenomena and then 'dig deeper'. Then we might be able to figure out if empirical reality itself, not just the way we think about it conceptually, is constitutive both for the way we use parts and wholes in our ordinary language and for the way our thus constituted language is interrelated with our ontological concepts – even if this would conflict with the Husserlian notion of the platonic ideality of concepts.

Moreover, it seems to me that in his discussion of language, Husserl extends only one half of his part-whole theory, namely its formal, but not its material side. If he had extended the latter, then Husserl would have had to take into account the actual diversity of particular languages and the manners in which concrete languages relate to the empirical world in order to be meaningful. Instead, Husserl decides to apply the objective and ideal domain of his formal ontology to language, whereby the latter's meanings and expressions are then taken as objective and ideal as well. Consequently, the Husserl of the 4th LI is not interested in particular languages and their correlations with the empirical world. Husserl's "relative indifference to actual empirical research on language" [Simons 1995: 121] is complemented by the positive aim of disclosing a rationalistic, formalistic "*grammaire générale et raisonnée*, a philosophical grammar" [Husserl 2001: 73] that forms the basis of every particular language.[40] However, it is problematic if not impossible to integrate reality-directed, dynamic and logically inconsistent notions like PWO into such a universal grammar, not only because this grammar would then certainly be "empirically contaminated [*getrübt*]" [id.: 74], amongst other things "by peculiarities of the individual and his life-experience" [id.: 73]. This grammar's a priori "fixed system of forms" [id.: 64][41] would also be at odds with the potential of PWO to create novel, maybe unforeseen meanings via the ongoing dynamic interplay of part and part/whole in which the relational binding of all parameters is specifically not fixed and universally as well as logically static once and for all.

It seems that even an exclusive concentration on the subjective act of meaning *intention*, as was suggested in the fourth objection of the previous paragraph, would not help in answering the question if and how language offers valuable clues regarding the ontological nature of PWO. As soon as we take meaningful linguistic expressions and not merely more or less arbitrary and subjective acts of thought and intention as the subject matter of our investigations, we will again be confronted with the meanings of these expressions. And according to the Husserl of the LI, even syncategorematic meanings are located in the ideal realm described by formal ontology where PWO, as we have seen, has no place. The path of meaning intention is thus a dead end for

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[40]"But here, as elsewhere where philosophical interests are concerned, it is important to separate the *a priori* sharply from the empirical, and to recognize that, within this widely conceived discipline, the findings of formal semantics relevant for grammarians have a peculiar character: they belong to an *a priori* discipline that should be kept apart in its purity. [...] To whatever extent the actual content and grammatical forms of historical languages are thus empirically determined, each is bound to this ideal framework: theoretical research into this framework must accordingly be one of the foundations of the final scientific clarification of all language as such." [id.: 73–4]

[41]"Meanings only fit together in antecedently definite ways, composing other significantly unified meanings, while other possibilities of combination are excluded by laws, and yield only a heap of meanings, never a single meaning." [id.: 62]

PWO taken as a category of reality itself: This path neither leads to meaningful language as a bearer of ontological information, because only objective meanings lead to meaningful language, nor does it lead to perception and experience, because our understanding of syncategorematic parts via a vague imaginative background is only a matter of thinking, not of actually perceiving reality as such or such with our senses.[42] In fact, this path does not lead to reality and its objects at all, because there is "no strict correspondence between meanings and objects" [Mohanty 1976: 91], as independent meanings (e.g. 'redness') can denote dependent objects (redness as a real object, which is a moment of independent material pieces) and vice versa.

Also, there appears to be no strict correspondence between subjective intentions of meanings (as 'meaning-acts') and objects in the world, because the aforementioned incongruity between meanings and objects is based on the incongruity between both intentions and meanings and between intentions and objects: "The possibility of independent meanings directed to non-independent 'moments' is not at all remarkable, when we reflect on the fact that a meaning 'presents' an object, but does not therefore have the character of picturing it, that its essence consists rather in a certain intention, which can be intentionally 'directed' to anything and everything, to what is independent as much as what is non-independent. Anything, everything can be objectified as a thing meant, i.e. it can become an intentional object." [Husserl 2001: 60] The *intention* of real objects is thus independent of these objects and therefore does not need to correspond one-to-one with the latter: intentional objects do not necessarily have to correspond with real objects, although they factually often do. We cannot take it for granted that an analysis of PWO as an intended object (just as little as an intended meaning) can yield any positive, justified results concerning the ontological nature of PWO as a really existing, objective aspect or category of reality, notwithstanding its subjective perceptibility.

For all of these reasons, it does not seem to be very advisable to continue with Husserl's 4th LI for a linguistic elucidation of PWO's ontological nature. As Bar-Hillel [1957: 368–9] concludes his discussion of the 4th LI, Husserl's very definition of language precludes from the outset any positive empirical research into the structure of natural language: "There is only one way of arriving at the common ideal grammatical framework of all empirical languages, namely by departing from the very definition of language. Nothing belongs to that framework that does not follow from this definition. The justification for an *a priori* statement that all languages contain, say, words and sentences can only be that this must be so by definition. But whether all languages contain nouns, or negation-signs, or modal expressions, after a general definition of noun etc. has been given, if this definition forms no part of the definition of language, can only be established by empirical investigation. [...] However, the last word about the exact relationship between logical syntax and the empirical sciences such as psychology and sociology, has not been said yet."

3.2.2 Towards Cognitive Linguistics

To the last arguments one might respond that in spite of the plausibility of the foregoing argumentation in favor of leaving the Husserl of the LI behind, we should not throw out the

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[42]"We understand an isolated 'and' either because the indirect, verbally unexpressed thought [!] of a *certain familiar conjunction* gives it an unusual meaning, or because vague, unverbalized presentations of things help us to form a thought [!] of the type *A and B*." [Husserl 2001: 61]

baby with the bath water. Perhaps there is still a hint in Husserl's 4$^{\text{th}}$ LI that is significant for the empirical path towards PWO. To this end, we have to look at the relationship between expressed meanings and meaning intentions again, thus at the semantic level of language. P. Bundgaard demonstrates that the 4$^{\text{th}}$ LI is actually divided into two parts, of which only the second (§§ 10–14) refers to ideal, a priori and universal laws on which every natural language and even logic is based. This second part concerns the syntactical structure of language and is, due to its renunciation of empirical matters, inapplicable to our further investigations. The first part (§§ 1–9), however, deals with the semantic layer, and it is here that Bundgaard detects an important connection with recent empirical studies in cognitive linguistics.

For both Husserl and cognitive linguistics, Bundgaard argues, the meaning of words and sentences is neither encased in language itself, nor in the two-place relationship between language as a truthmaker and the world as a truthbearer. Instead, the expressed meanings of language first and foremost tell us something about the intentional mind and only via the intentional mind something about the world in which the mind with its intended meanings is embedded.[43] As we have seen in the preceding paragraph, this relationship between mind and language does not have to be a one-to-one picturing relationship, in which every linguistically expressed meaning is an exact picture of its antecedent intention. The meaning of what we say or write does not necessarily need to correspond with how we intended it. Still, as Bundgaard puts it, Husserl and cognitive linguistics share the claim "that predicative structure is rooted in ante-predicative structure, or that *linguistically articulated signification* is not exhaustively describable in its own, grammatical terms, but is tributary to specific *meaning conferring* and *meaning fulfilling* acts and the latter's essential structure. It is therefore no surprise that cognitive linguists have explicitly acknowledged their debts to phenomenology; yet rarely, if ever, directly to Husserl; rather, indirectly, *via* M. Merleau-Ponty." [Bundgaard 2004: 52]

It is exactly this shared assumption that the study of semantic language discloses relevant meaning-fulfilling (not necessarily meaning-generating), prelinguistic structures of the mind that can lead us from Husserl to relevant aspects of cognitive linguistics. The use of natural language enables us to express prelinguistic meanings, which means that meanings precede language and that expressible meanings can be located in the mind,[44] even if they can still originate elsewhere. Thus if we want to investigate if and how ordinary judgments about parts and wholes, including their interplay as PWO, can tell us something about their ontological nature, we are directed to the structure of the mind that makes and expresses such judgments. Let us therefore hypothesize that language could give us important clues about the way we cognize PWO as a meaningful ontological category. The switch from Husserl to cognitive linguistics is then justified by at least three reasons.

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[43]"Finally, it should be stressed that the object 'language as such,' which is assessed in this functional approach, is not accessed as a self-contained, autonomous object, i.e., by virtue of its specific essence qua that kind of object, but rather by virtue of its being an object whose essential function is to be a symbolic vehicle, a means of expressing, faithfully reflecting, and rearticulating already formed, structured, or configured pre-linguistic contents of meaning acts." [Bundgaard 2004: 59]

[44]"In his Investigation, Husserl did inaugurate a fundamental idea shared by both Chomskyan grammar and cognitive linguistics: the study of language tells us a lot about the mind. Yet, I believe that his point is much more cognate to the latter than to the former: if language reveals anything essential about the mind, it does so not because the mind is 'structured' like a language, but on the contrary because language, to the extent that it expresses and articulates what the mind 'has in mind,' is structured like the mind." [Bundgaard 2004: 53]

Firstly, the Husserl of the 4ᵗʰ LI, after locating meanings in acts of meaning intention, further traces them back to a Platonic realm of universal laws and ideal meanings, where the formal ontology of parts and whole is also situated. Cognitive linguistics on the other hand lets meanings originate in our embodied being-in and perceiving the world, including the particular cultures and linguistic communities every person makes part of, which is included in what Husserl would later call the *Lebenswelt*. This empirical and 'inner-wordly' turn is crucial if we want to respect the inductive answering of the meta-ontological *quaestio iuris* in the context of PWO.

Along with this first reason goes a second one. Husserl is not concerned with the natural languages in which all of us communicate, but he aims at developing of a pure grammar, a "pure theory of meaning forms [...] that must lay bare an ideal framework which each actual language will fill up and clothe differently [...]". [Husserl 2001: 74] Thus, while Husserl seeks the unification of language by stripping away its empirical and cultural diversity, cognitive linguistics, as we will see in a moment, takes this diversity as a starting point to reveal meaning-fulfilling structures of the embodied mind that can (and should) vary in cultural space and over historical time. Again, such a rather ordinary and contingent conception of meaning seems to be in accordance with our commonsensical and varying judgments about parts and wholes, even if this would ultimately lead to a pluralistic ontological framework into which the notion of PWO can fit.

Thirdly, although the second part of its name may suggest otherwise, cognitive linguistics does not restrict meaning to linguistic meaning and its intentions, but takes meaning to be as broad as possible.[45] As cognitive linguist M. Johnson, on whose research I will concentrate in the following sections, accentuates: "How can *anything* (an event, object, person, word, sentence, theory, narrative) be meaningful to a person?" [Johnson 1987: 2] Linguistic, propositional meaning is thus only a subcase of meaning or meaningfulness in general. Such a generous conception of meaning, in which the meanings of propositions are closely connected with the meanings of non-linguistic domains such as perception, values, abstract concepts, nature or other persons, does not come to the foreground in Husserl's 4ᵗʰ LI, in which meaning is a "special field" [Husserl 2001: 49] consisting of linguistically expressed meaning-acts that are based on a priori laws of meaning. Not switching from Husserl to cognitive linguistics would thus mean reducing the possible meanings of PWO to linguistic as well as a priori meanings from the outset. As ontology is primarily concerned with reality in general and the proper nature of entities, however, any ontological research into meaning or meaningfulness should consider the latter in the broadest sense possible instead of neglecting fundamental aspects of it. This is in accordance with commonsensical judgments such as "this makes sense" or "x means something to y", which are not restricted to whether a proposition is true or not. For these reasons, it is advisable to use the common ground between Husserl and cognitive linguistics, i.e. the prelinguistic structure of the intentional, meaning-fulfilling mind, in particular concerning parts and whole, as a swivel plate from which we then move on in a different direction.

To conclude, let us have a look at two examples given by Bundgaard of how linguistic expressions can reveal basic intentional properties of the mind. It is clear that we are not yet in the position to relate these properties back to reality or to present a systematic analysis of them as basic structures of the mind, let alone to arrive at any insight for our ontological project

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[45]Cf. subsection 4.1.2.

concerning PWO. To do so, it would be necessary to inspect at least one concrete theory of cognitive linguistics, which is the task of the following chapter. But in the context of the next chapter's aim to relate experience (here taken as empirical perception in an active, embodied sense that I will also elucidate anon) and meaning qua general meaningfulness, Bundgaard's examples can serve as an initial impression of how the first two stations of the bidirectional path *language ↔ mind ↔ body ↔ reality*, of which the here followed epistemological order goes from the left to the right and the thus reconstructed ontological order goes from the right to the left, is shared by cognitive linguistics and the Husserl of the 4$^{\text{th}}$ LI alike, despite their apparent discordance concerning the station 'reality' (empirical-contingent vs. Platonic-ideal).

For the first example, Bundgaard relates two independent linguistic parts that Husserl would classify as 'categorematic' with a set of dependent 'syncategorematic' parts consisting of the coordinating conjunctions {but; and; or}. The categorematic parts are:

1.1 They are married.

1.2 They do not live together.

Both **1.1** and **1.2** can be connected either with 'but', 'and' or 'or' in order to formulate a semantic whole for the three parts involved. The semantic whole must already be intended by the mind for it to be expressed in language. "If a representation exists that combines **1.1** and **1.2** into one complex representation, then, Husserl claimed, there must be a semantic correlate to that global representation, and to the semantic form there must be a specific grammatical correlate, i.e., a way of faithfully expressing the intended meaning. This means that not only the partial representations, but also the intentional form of combination should be expressible." [id.: 66] In the case of 'but', the expressed intentional form then sounds as follows: 'They are married, *but* they do not live together.' The semantic level of this sentence then enables us to open up a field of possible meaning-intentions of which each could have found their expression in this sentence. But no matter if the meaning-intention consisted in, for example, the expression of a moral standard (they *should* live together), a progressive statement (they do not need to live together *although* they are married), a descriptive information, or some sort of suspiciousness (why don't they live together when they are married, i.e. what is going on in this marriage?), there is one commonality all of these concrete intentions share: the contrasting meaning of the 'but'. "Thus, the meaning of 'but' could be characterized as follows: in a complex construction compounded with 'but,' whatever is to the left of 'but' and whatever is to the right of it are intended as 'contrasting' or 'conflicting' contents in some respect; they take on this additional, and crucial, semantic value by virtue of the dependent content that combines them. Thus, dependent contents do not simply require determinate contexts; in fact, their meaning *is* the kind of semantic whole into which the partial significations are combined." [id.] Given the frequency of the word 'but' in the most diverging contexts and languages, given its most general meaning of 'contrasting' two or more categorematic parts by providing them with a certain semantic value, and under the assumption that language is a manifestation of intentional structures, we can conclude that 'contrasting *a* with *b*' – as simple as it may sound – is an essential and meaningful structure of our mind. Of course, such a structure can and should then be further analyzed as well as related to our ways of perceiving or being embodied in the world, which is, however, not Bundgaard's own intention in the article I am referring to here.

For a further example, Bundgaard draws on L. Talmy's 2000 book *Towards a Cognitive*

Semantics. Therein, Talmy demonstrates, amongst other things, that the use of prepositions in sentences and the intentionality behind this usage can also provide us with insights regarding the structure of the mind, in this case its perspective nature. Bundgaard cites the following two sets of sentences:

2.1 The cat is *on* the car. **2.2** The cat is *in* the car. **2.3** The cat is two feet *from* the car.

3.1 The boat is *on* the water. **3.2** The boat is *in* the water.

Via their respective syncategorematic propositions (*on*, *in*, *from*, *on*, *in*), the meanings of both sets of sentences are expressions of certain mental conceptualizations of the categorematic parts (the cat / the car; the boat / the water). The propositions of the first set of sentences reveal that in **2.1**, the car "is conceptualized as a *surface* (with all other properties abstracted away); [in **2.2**] as a *volume* or a *container* (with all other properties abstracted away), and [in **2.3**] as a *point.* What the examples reveal is that a specific mode of perceptually intending the car is specified by the prepositions, namely to the effect that only certain of its spatial properties are referred to, while all others are neglected." [id.: 69–70] Thus when the speaker of these sentences is intending the car as an independent, perceptible object, she is not intending the whole car with all of its properties, but only a very rough, spatial schema of it in relation to which the cat is situated. While the three sentences of the first set describe three different states of affairs with three corresponding intentions, the two sentences of the second set describe only one state of affairs but with two corresponding intentions, which proves the above mentioned Husserlian insight that there is no one-to-one correspondence between intention and world. According to Bundgaard, the usages of *on* in **3.1** and of *in* in **3.2** not only correspond with the schematization of 'the water' as a surface and a container respectively. They also tell us something about the perceptive point of view from which the observer schematizes the factually invariant scene. **3.1** would presuppose a rather "*distal* point of view from which the water is given in experience as a homogeneous plane (no significant or perceivable movement of waves, etc.), whereas 'in' specifies a *proximal* point of view from which the water is given in experience with its mass and voluminous character (waves licking the hull, etc.)." [id.: 70] Such a perspective point of view can never be incorporated in a classical theory of truth in which there is only a two-place correspondence between language and world. "Basic semantic features displayed in language are simply not assessable in purely linguistic terms. They are essentially grounded on characteristics and structures of perception and intentional experience as such. Thus, in cases of alternations in schematization, the differences are readily – and sometimes quite subtly – reducible to gestalt differences between figure/ground structures in the experienced referent scene, intentional distribution of attention to a reference scene, perspective, and modes of perceptual apprehension." [id.]

This means that we have to take natural language as a starting point, but then go beyond language and insert the structure of the intentional mind, including – as we will see below – its own basis, the human embodiment in the empirical world, as a third, indispensable factor if we want to derive ontological insights about reality from ordinary language at all. For the attempt at determining the ontological nature and status of PWO, the Husserl of the 3rd and 4th LIs drops us at exactly this point. If there is anything further to determine about PWO, we have to swivel the focus, bracket the formal part-whole ontology of the 3rd LI with its ideal meanings and logical coherence, and pocket the acquired technical terms of the *quaestio facti* in order to turn to the empirical realm of prelinguistic embodiment and the semantics of natural,

ordinary language. This is the point where it is time to bow out of Husserl's a priori constructs of ideas and to address relevant aspects of cognitive linguistics, under reference to the ties between the two established by Bundgaard. As he rightly accentuates, the benefits of cognitive linguistics not only lie in its interest in language as such, but in its embracing of "comprehensive cognitive theories that study and lay bare (1) the relative dependence of linguistic structure on prelinguistic structure; (2) the essential tenets of prelinguistic structure; and, finally, (3) the design features of the linguistic system that make it capable of systematically expressing and re-articulating such a conceptual structure." [id.: 72]

This is not to say that all cognitive theories and theorists are equally important for the present project. In fact, given the enormous body of literature on all aspects of linguistic phenomena that has been published under the label of cognitive linguistics since the second half of the last century, I would like to concentrate on the works of M. Johnson, including contributions by scholars who published on Johnson's ideas and joint publications by Johnson and his colleague G. Lakoff. Johnson can be considered as one of the most prominent and influential figures of cognitive linguistics. What is more, his approach is highly philosophical in that he constantly relates philosophical topics to research in linguistics and empirical perception. In so doing, his theories stand out among those of other cognitive linguists. Equally important for my own project, Johnson not only extensively discusses the philosophically significant notions of metaphor and image schemata, but he also addresses the subject of metonymy, which is the field, however, where I also have to go beyond Johnson, as he (and Lakoff) himself only touches upon this subject of research within cognitive linguistics. If we take linguistic meaning to be an indicator of intentional meaning, then these not exclusively linguistic forms (metaphor and metonymy) might reveal how our mind schematizes parts-whole relations and how such relations are generated by our bodily being in the world and perceiving our environment with our senses. Hypothetically, it might even tell us something about PWO as an ontological category of reality that is incorporated by the body, schematized by the mind and expressed in language. By all means, for any part-whole ontology based on ordinary language and empirical grounds, an investigation into the cognitive linguistic notions of metaphor and metonymy is a golden opportunity.

The final reason why I want to concentrate on Johnson's cognitivist theory is closely related to the previous one. Johnson claims to defend an 'embodied realism', but the scope of his investigations and examples seldom exceeds the domains of language and mind/embodiment. It seems to me that in his works, the pretended 'realism' only gets a raw deal compared to the rather subject-oriented topics. As Johnson denies any strict dichotomy between a real existing outside world and the subjective understanding of it, however, it would be enlightening for any ontological reading to know more about the way reality itself is structured *so that* the human mind and body can find their proper place in it. Of course, such an ontological focus transcends the limits of any cognitivist research, but nonetheless, I think that this question treats one of the philosophical consequences of cognitive linguistics à la Johnson (and others). Furthermore, it is of particular importance for any ontological determination of PWO, which is my motivation to address the somehow 'suppressed' yet pretended realism of Johnson's cognitivist theory, i.e. Johnson's hidden ontology, with a special emphasis on part-whole relations.